

ELEVENTH SEMI-ANNUAL COAL STRIPPING MEETING

COAL MINING

UNIVERSITY MICROFILMS
313 N 1ST ST
ANN ARBOR, MICH

SEPTEMBER, 1954

VOLUME 31, No. 9

Servicing the coal industry is our business!

ROBERT BAILEY, MORRISDALE, strips overburden with Lima Dragline.



Experience acquired on many jobs assures you of the benefits of proper equipment selection . . . matching the right machine to your job.

You are cordially invited to discuss your most troublesome production problems with our representatives.



Like all leading operators, RUSSELL CRAVENER MINING CO., Kittanning, strips with Allis-Chalmers HD-20s.

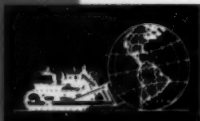


COAL RIVER MINING CO., West Milford, speeds production with Lima 2400 shovel.

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The MARION 7400 Walking Dragline pictured above, swinging a 12½ cubic yard bucket on a 175-foot boom, handles most of the stripping for a busy Kentucky coal mine. Its production, even in hard sandstone, is impressive.

Two MARION 151-M Shovels, a MARION 93-M Coal Loader and a MARION 362 complete the team of MARION equipment at work in this busy mine.

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SELF-PROPELLED HORIZONTAL

● A New Castle, Pa., operator reports boring "840," various depth holes through shale and sandstone, in one working day. Bores 6" and 8" diameter holes at rate of 6' per minute maximum.

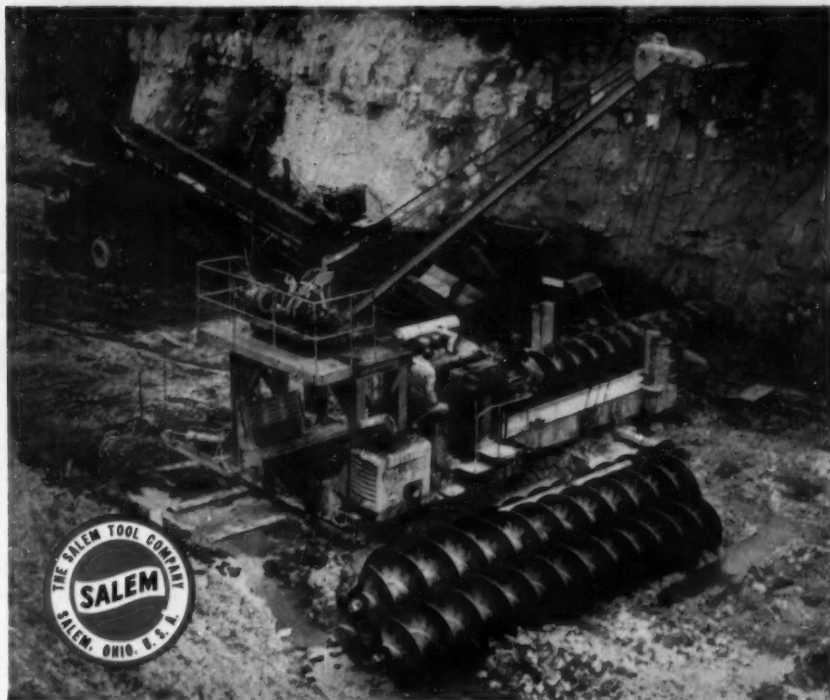


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● Robert B. Cleghorn, Jr., Hodgeville, West Virginia, reports his hydraulic, self-moving 42" McCarthy Coal Recovery Drill mines "up to 500 tons of clean, low-cost quality coal per day." Cleghorn has a three-man crew—operates in pits as narrow as 34 feet. Operator has total vision, including the highwall. Model 12 handles 24' augers from 16" to 48" in diameter.

● Other McCarthy Coal Recovery Drills handle augers 4', 6' and 12' in length.



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doesn't have to stop
when your mine is
"stripped-out"**



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drill
bonus tonnage from seams
buried by excessive overburden

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part of coal seam, away from rock and shale. A choice of cutterheads helps determine size. Coal comes out in a steady flow, convenient for loading by mechanical means. A full description of CARDOX AugerMiners and facts about how they can help you *continue profitable production* are available in a free AugerMiner bulletin. Write for it—or see your Cardox representative.

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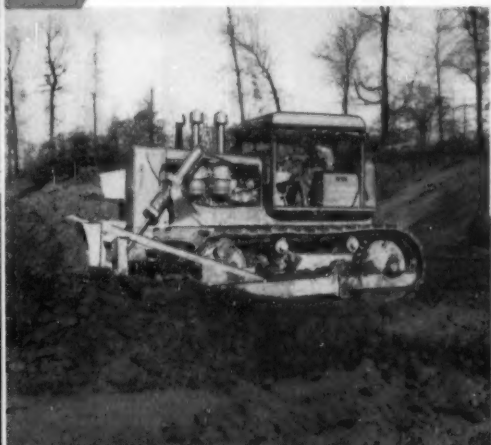
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COAL MINING

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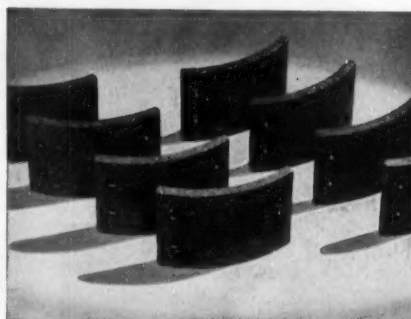
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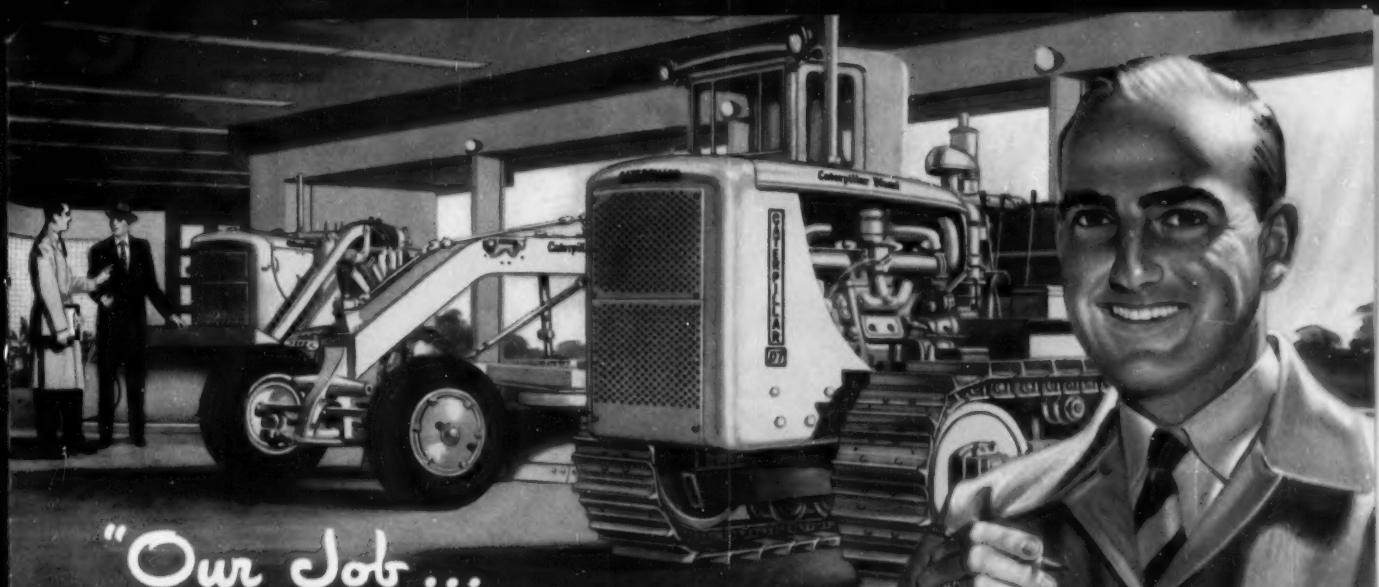
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**TO HELP MAKE
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When you are faced with equipment selection problems see us, your Caterpillar Dealer. We have proved, dependable earthmoving equipment in the size and capacity you need. These machines are built to rigid specifications and subjected to rugged, thorough testing before receiving final approval. This means more "going time" . . . more work . . . more profit!

Backed by our excellent service facilities and adequate inventory of genuine Cat parts, you are assured of more for your money. We are ready to help you, now! See us soon!

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Few parts are as vital to the performance of a machine as the gears that put power to work. Gear design and metal-alloy research are given careful, thorough attention at Caterpillar Tractor Co. Everything possible is done to give you, the customer, long-lived machines that will deliver hour after hour of uninterrupted service.

Engineers, specializing in gear research, are constantly developing new gears and subjecting them to rigid tests for precision, strength, and wear resistance. Further testing is done in production machines under the most severe job conditions. Only the gears that can take this punishment find their way into Caterpillar machines.

Gear manufacturing receives equal emphasis. The whole process—forging, machining, heat treating—is constantly analyzed and reviewed for ways to make gears able to withstand the shock loads constantly imposed on them in earthmoving work. Precision tools and quality-control methods assure you that each finished gear meets the exacting Caterpillar standards.

We, your Caterpillar Dealers, are proud to bring you these machines . . . completely designed and built by one manufacturer to do your job better. We are confident that you will benefit from many hours of continuous operation, and that extra production that means *extra profit!*

CATERPILLAR



LOOK TO THE
DEALER BEHIND
THE PRODUCT

The fatigue test machine, shown at left, applies stress loads to the gear tooth surface. These loads are more than 4 times the maximum shock loads encountered on the toughest job. Only the gear design that best withstands this rugged testing program becomes part of your Caterpillar machine.



▲

The steady power from the 225 HP Diesel is carried through tough, precision gearing to the big drive wheels of the DW21 and gets work done fast—even in heavy going. Positive, hydraulic steering enables the operator to combine traction with walking action to get in and out of tough spots. The easy-loading, matched Cat No. 21 Scraper picks up and empties a heaped load fast.

Here's where careful design and manufacture of gears benefits you—on the job! With the shock loads, found in every 'dozing operation, each part of tractor and bulldozer must absorb its share of the load. Cat-built units are designed to do this. Crown shaved final drive gears, protected from dust and dirt by patented bellows seals, are just two of the many "extra-life" features resulting from Caterpillar research.

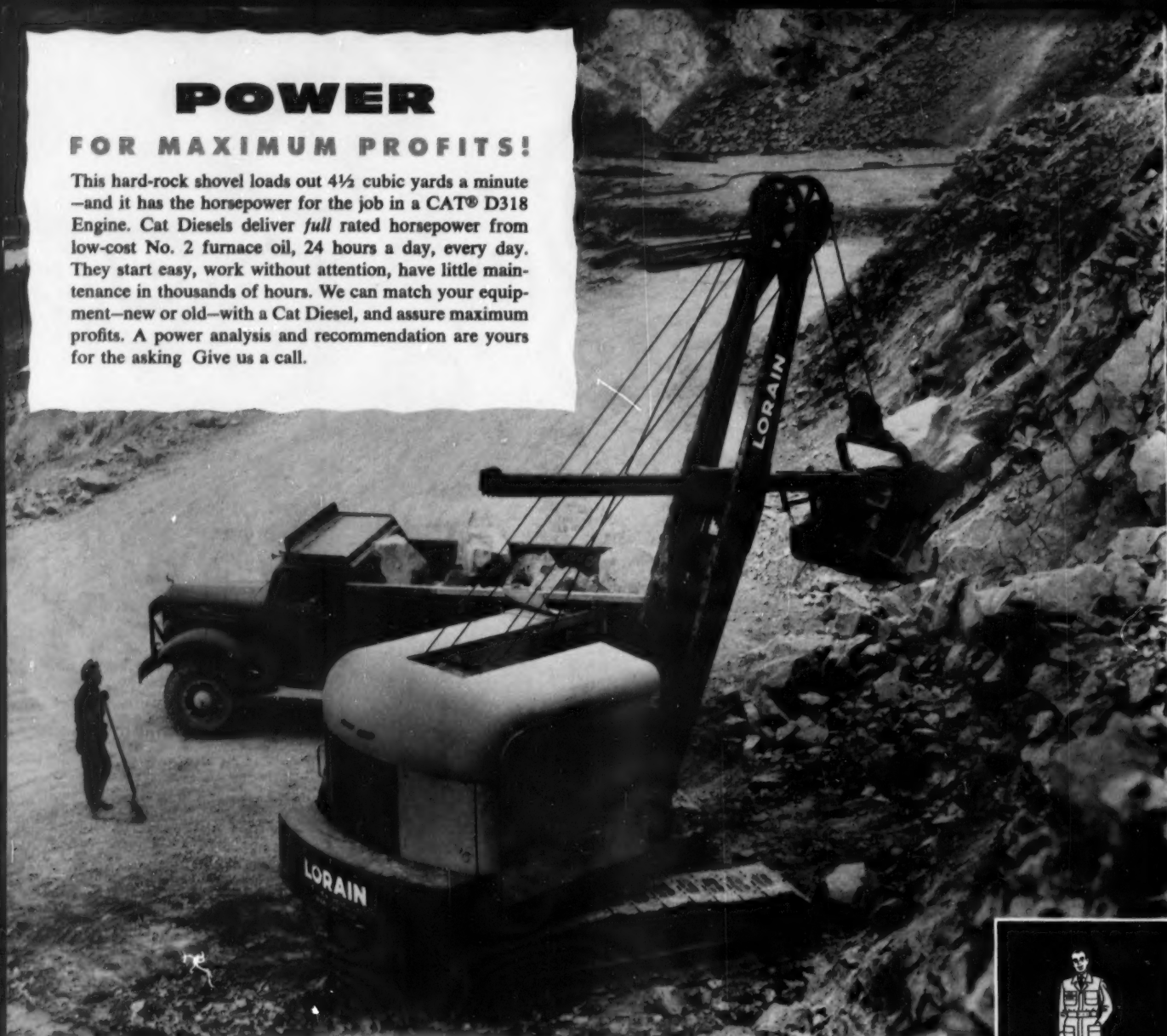
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POWER

FOR MAXIMUM PROFITS!

This hard-rock shovel loads out $4\frac{1}{2}$ cubic yards a minute—and it has the horsepower for the job in a CAT® D318 Engine. Cat Diesels deliver full rated horsepower from low-cost No. 2 furnace oil, 24 hours a day, every day. They start easy, work without attention, have little maintenance in thousands of hours. We can match your equipment—new or old—with a Cat Diesel, and assure maximum profits. A power analysis and recommendation are yours for the asking. Give us a call.



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Mighty Manitowoc 4500

... outstanding preference of Eastern strip miners

Hers's a mighty Manitowoc 4500, 5½ yard dragline stripping coal for The Latrobe Const. Co. at York Run, Pa.

The Manitowoc 4500 is the outstanding preference throughout the strip mines of the East. You see them everywhere—in Pennsylvania, West Virginia, Ohio—producing yardage that means more profits on every shift. And the “reasons why” are no secret—profitable performance is built into every Manitowoc—features like its faster operating cycles, positive-action torque converter, faster traveling speeds and complete diesel operation that requires no trailing cable or electric supply, wide pads and pressure.

These are the operating features that are causing owners and operators everywhere to swing over to Manitowoc. It will pay you to see Manitowoc before you buy your next shovel or dragline.

MANITOWOC

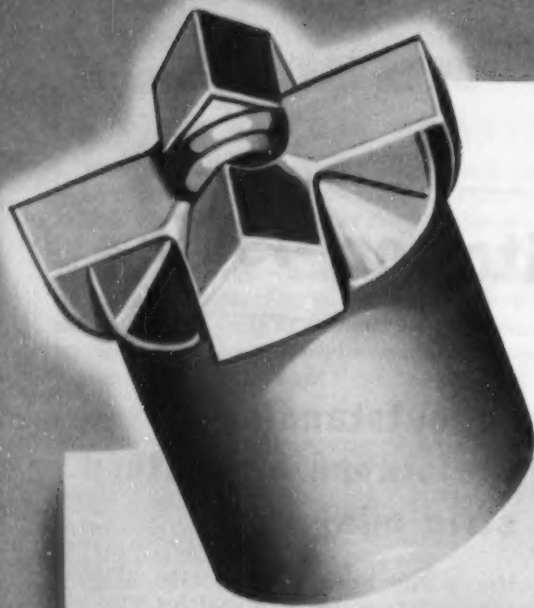
SHOVELS
1-5 YD.

Speed Crane

CRANES
18-100 TON

ANDERSON EQUIPMENT CO., P. O. Box 427 Bridgeville, Pa.
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Here's another

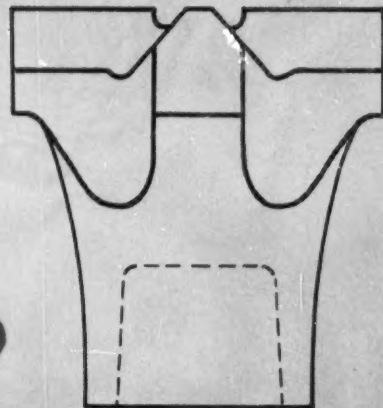


Simplicity of Attachment

Simplicity of Shank

Offset Gauge

Stronger Wings



The union of the bit and the rod after drilling has a cohesive strength of several tons . . . A sharp blow of sufficient weight on the end of the bit skirt will serve to detach the bit from the rod.

SPECIFICATIONS

Mines everywhere cut drilling costs with CRD DETACHABLE DRILL BITS • 4 - Wing Type - Center Hole - Side Hole

Class "A" Bits	Size	Color	Class "B" Bits	Size	Color
For class "A" drill steel connection on any steel. Best suited to 7/8" steel.	1-1/4	Aluminum	For class "B" drill steel connection on any steel. Best suited to 1", 1 1/8" and 1-1/4" steel.	1-7/16	Orange
	1-5/16	Pink		1-1/2	Green
	1-3/8	Deep Green		1-9/16	Yellow
	1-7/8	Brown		1-5/8	White
	1-1/2	Gray		1-11/16	Black
	1-9/16	Maroon		1-3/4	Red
	1-5/8	Deep Blue		1-13/16	Blue
				1-7/8	Tan
				1-15/16	Plain
				2	Pink
				2-1/8	Maroon
				2-1/4	Aluminum

Cans are labeled showing size of steel socket, gauge of bit, and color.

way to cut drilling costs!

Use Le Roi-CLEVELAND one-use CRD Detachable Bits



Lower cost per foot of hole — that's the goal of everyone who has rock to drill. And that was the goal of Le Roi-CLEVELAND engineers, too. They didn't fool around with the problem either.

Fifty years of experience in designing rock drills was put to work. The result — a one-use detachable bit that can save you money in a wide variety of applications.

This designing job wasn't done overnight. You can't produce the results our engineers were after in such a short time. Instead, these bits were put to work—and, for a number of years they have helped reduce drilling costs materially in mines, in quarries, and on construction jobs.

That's why we offer them to you now — with complete confidence in their ability to help you improve your rock-drilling cost picture.

These Features Mean Lower Drilling Costs for You

Faster Drilling Speed — Special offset gauge feature, which permits the use of thinner wings and a steeper reaming angle, greatly reduces binding and provides ample

clearance for cuttings. Result is a free, fast-cutting chiseling action that gives you greater drilling speed.

Less Drill-Steel Breakage — The method of attachment used with the CRD bit eliminates threads on the drill rod. Since a drill rod is only as strong as the root diameters of its threads, the tapered threadless CRD design provides longer drill-steel life — reduces drill-steel handling and reconditioning costs.

Lower Rock Drill Repair Costs — Because the CRD bit design reduces binding in the hole, there is less strain on the rotation parts of your rock drills. Rifle bars, rifle nuts, and chucks last longer. You get more drilling done at lower cost.

Since no special equipment is needed to thread rods, you owe it to yourself to try a can of CRD bits. They're ideal for roof bolting and for use in your stopes as well as in your headings. A short trial will give you first hand information on the ability of these bits to cut drilling costs in your property as they have in so many others.

Bulletin RD-29 gives detailed information. A copy is yours for the asking — just write for it.

RD-29



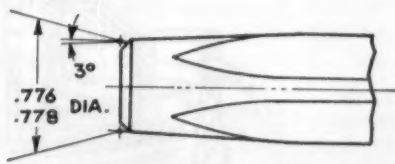
CLEVELAND ROCK DRILL DIVISION

Le Roi Company

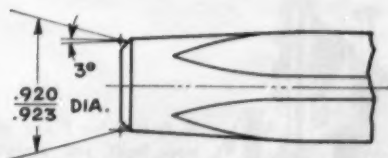
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Taper shank dimensions for 7/8" steel.
Class A Bits



Taper shank dimensions for 1" hex,
1" Q.O., 1 1/8" and 1 1/4" rd. steel.
Class B Bits

The taper attachment shank used with the CRD bit is easy to make. You need no dies or other expensive threading equipment. Several simple, low-cost methods can be used for preparation — grinding, forging or machining.

A 50 YEAR Partnership



with the Coal Mining Industry

On September 26th, Roberts & Schaefer Company will have completed fifty years of such close association with the coal mining industry that we have come to think of it as a partnership.

These have been years of accomplishment, both for the industry and ourselves. The mining companies have worked diligently and consistently to provide a better product; we have worked with them to supply the preparation process best suited for their requirements. During these years R & S Coal Preparation Plants have been installed in major mines throughout the United States and many foreign countries.

Each of these preparation plants has been designed with the exact equipment required by the individual mine. Roberts & Schaefer Company is able to supply its own Super-Airflow Cleaner for air washing, the Hydrotator and Hydrotator Classifier for wet washing, and Heavy Media Separators for difficult cleaning problems.

As a further service to the industry, full-size units of each of these methods have been consolidated in the R & S Pilot Plant at Harvey, Illinois and are available to test carload quantities under actual operating conditions to determine in advance the method required for constant, low-cost preparation. An outside, unbiased laboratory report of all end products is then supplied with R & S recommendations.

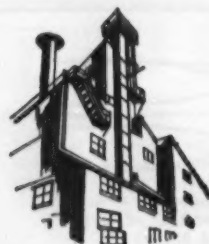
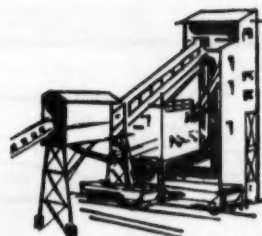
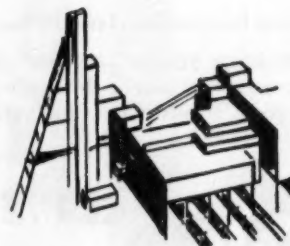
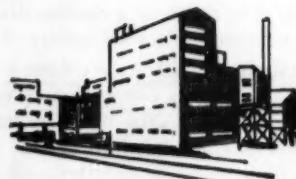
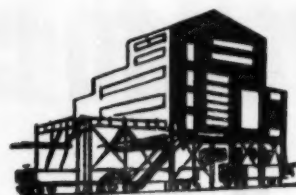
The establishment of this pilot plant is an indication of our confidence in the continued activity of the coal industry, and we look forward with assurance to another fifty-years—and more—of working together to our mutual advantage and accomplishment.

ROBERTS & SCHAEFER COMPANY

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Inc., 220 Broadway, New York 38,
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R & S Pilot Plant at Harvey, Illinois built and maintained for the sole purpose of testing coal cleaning methods under actual operating conditions.

Do You Know?

● Work, even hard work, is good for a person while rest may be damaging.

This idea, bound to be unpopular in some quarters, comes from Dr. W. Melville Arnott, professor of medicine in the University of Birmingham, England.

Work got its bad name, he states, because it includes, or has included in the past, an element of exploitation. Toiling for 70 or 80 hours a week in the "dark satanic mills" of the last century was harmful, he agrees. But, he says, when a claim is made that to work for more than 40 hours per week in a modern factory or shop is unhealthy, no one is really expected to believe that it is the work itself that hurts.

"Such a claim," Dr. Arnott says, "is merely a move in the complex adjustment of remuneration, the setting of the dividing line between normal and overtime rates."

None of the known effects of work, he states, can harm healthy tissues. On the contrary, all the effects are good in the sense that they develop and extend the range of adaptation of physiological mechanisms.

Rest, on the other hand, can produce profound and damaging changes. Blood circulation, blood vessels, and kidneys show these effects. Muscles lose their tone, ligaments stretch and joints get out of position from long rest in bed. Appetite fails and constipation is common, showing the effects of bed rest on the digestive system. Even the skin may show damage, bed sores developing at pressure points.

Doctors are getting away from the idea that sick people must stay in bed except during the acute stage of the sickness, Dr. Arnott points out. But he still thinks rest is being overdone and says this about being:

"We should all agree that work, even hard work, which involves no avoidable hazard, does not interfere with sleep or nutrition, which is remunerated sufficiently to remove any sense of exploitation, and which allows of enough recreation to counteract tedium, is harmless. "Indeed, it is beneficial."

Dr. Arnott's complete report on the abuse of rest and the good features of work was made to the Royal Society of Medicine in London.

● Pneumatic leg splint of lightweight plastic rolls up for easy carrying or storage. Its longitudinal air chambers, which keep the splint straight, can be inflated by mouth or pump. The splint includes metal supporting bars, a U-shaped bar, and a Pierson attachment for foot support.

Here and There in the Coal Industry

● William C. Jones, controller, Alabama By-Products Corp., has been elected president of the Birmingham Control of the Controllers Institute of America.

At the annual meeting of the organization's Pittsburgh Control, James M. Veeder, assistant manager, finance, Koppers Company, was named a director.



WILLIAM C. JONES

Established in 1931, the Institute is a non-profit organization of controller and finance officers from all lines of business—banking, manufacturing, distribution, utilities, transportation, etc. The total membership exceeds 4,300.

● The Philadelphia and Reading Coal and Iron Company has entered into arrangements with Hydrocarbon Research, Inc., for a long-range experimental program in coal gasification utilizing anthracite, it was announced here today (Thursday, September 2, 1954) by Edward G. Fox, President.

Mr. Fox said that Hydrocarbon Research, Inc., will carry on experimental work at its Trenton Laboratories for the P and R company looking toward the gasification of anthracite and the utilization of the gas products.

The project was described by the P and R executive as the latest step in the company's research program into the conversion of anthracite into synthesis gas. The Philadelphia and Reading Coal and Iron Company has been carrying on evaluation studies and applied research work in this field for the past several years.

Arrangements for the Hydrocarbon Research, Inc., project were made by Dr. Robert J. Day, P and R Director of Research, and the project will be conducted as an integrated part of the coal company's broad experimental and research program under Dr. Day's executive direction.

● Mrs. Mildred B. Fishback, whose son, Clifford L. Fishback, of Columbus, O., is vice president of Elk River Coal & Lumber Co., died last week at her home in Washington, D. C. She was 86 years of age and was the widow of J. Howard Fishback, a Washington attorney.

● West Virginia Coal & Coke Corporation announces these actions taken by the board of directors at its meeting Aug. 18: John Ladd Dean, a director, was elected a member of the Executive Committee; Morris Creditor, a director who is also president of The Ohio River Co., a wholly-owned subsidiary, was elected executive vice president of West Virginia Coal & Coke; and A. H. Crane, vice president, secretary, and treasurer, was elected a director.

● Midland Electric Coal Corp., Chicago, has announced the election of W. E. Mullins as chairman of the board, a newly created post, and T. C. Mullins, Jr., as president. The latter succeeds the late T. C. Mullins. W. E. Mullins is a nephew of the deceased Harry M. Ziv, of Chicago, vice president of Walter E. Bledsoe and Co., was elected to the board.

PENN

Out front again...

with the PENN
telescopic
front
mounted
hoist



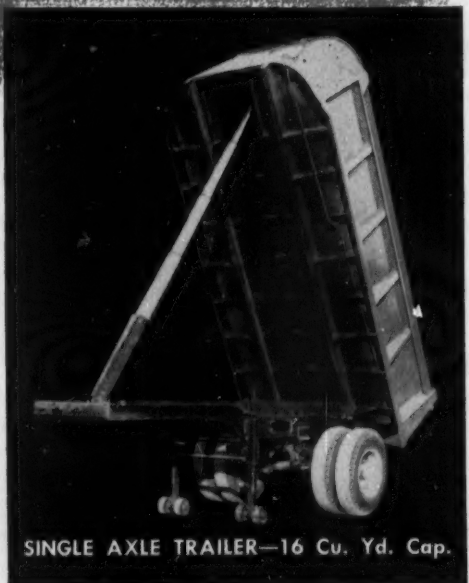
Haul bigger payloads for less

95% (PLUS) SAFER TO OPERATE

At last a new hoist which permits you to increase your payload and cut your overhead on single or tandem axle semi-trailers. Increased payload is made possible by the weight saved on the single hoist and the fewer parts required for mounting it. Also the front mount feature places more weight on the tractor axle and less on the trailer chassis axle.

Lifting the load at the front of the body and eliminating all body over-hang ahead of the hoist assures greater stability. In actual use the Penn Telescopic Front Mounted Hoist has shown itself more than 95% safer than other types of hoist installation. The single hoist is more economical as it requires less parts and maintenance.

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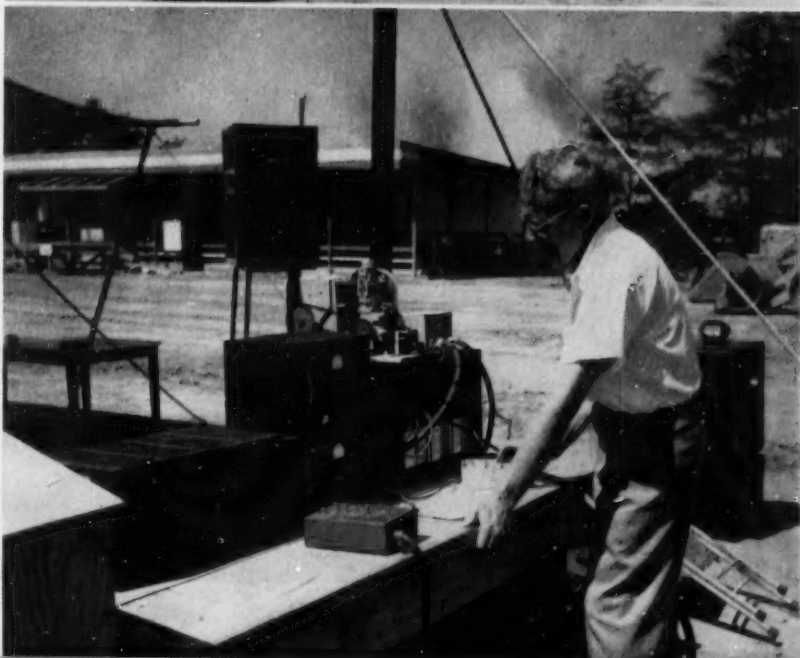
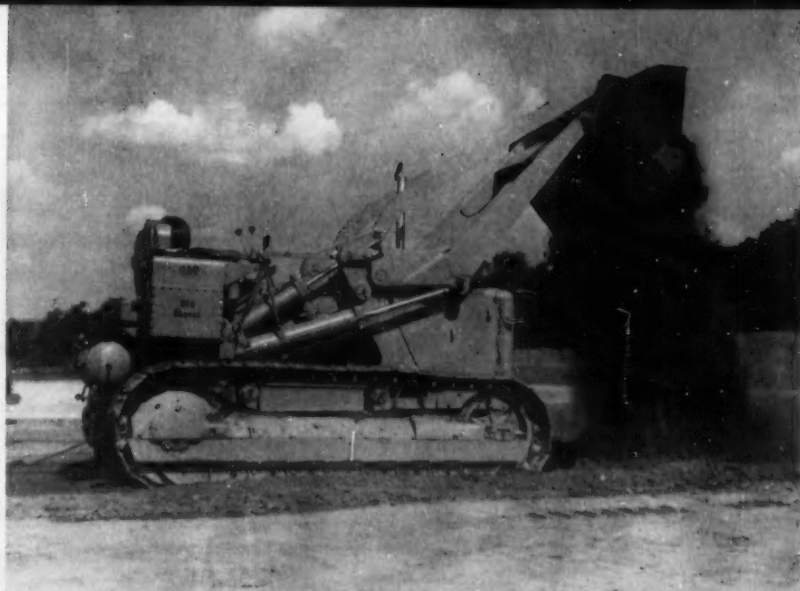
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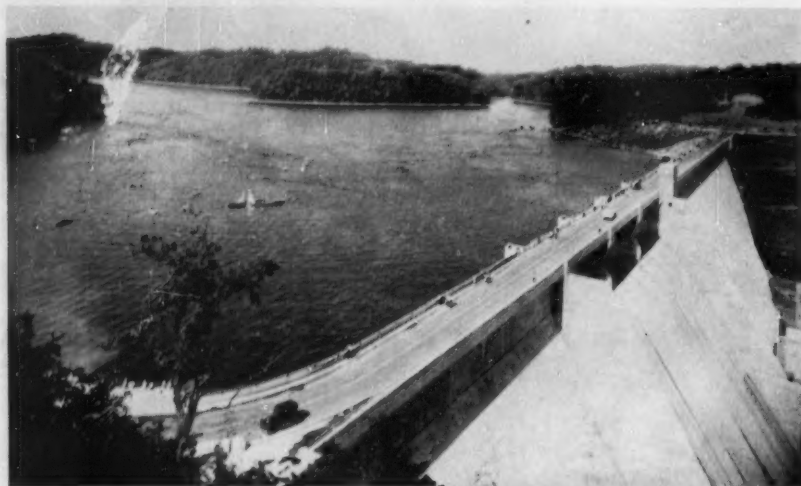
STRIPPING AND AUGERING COAL IN TENNESSEE

● In recent years the state of Tennessee has become synonymous with the Tennessee Valley Authority (TVA) or the Atomic Energy Commission (AEC). Until these two government projects were begun, the coal production curve of Tennessee rose in wartime and dropped in peacetime.

The Atomic Energy Commission chose to locate in Eastern Tennessee because it figured on cheap electric power, generated by water from its newly constructed Norris Dam. It was soon learned, however, that due to the enormous increase in the demand for power and the unreliability of water generated supply, steam generating plants would have to be built to satisfy the unexpected increased requirements for the government as well as for the great influx of industry. This new development is making some Tennessee optimists predict an increase in the coal demand from less than 2-million tons in 1952 to about 18-million tons annually in the near future. From the standpoint of the coal industry this greatly increased demand for coal is the exact opposite from what it was intended to be when this locality was chosen because it could develop cheap water power.

Most of the coal in Tennessee lies in the Cumberland Plateau which is part of the Appalachian Range, running Southwest across the Eastern part of the State, about 55 miles wide and 250 miles long. This plateau contains 6 workable seams of coal under today's mining methods. The thickest seam in the area (Big Mary) runs 52 inches at its best. All the seams require constant prospecting in advance of mining as they either thin out,

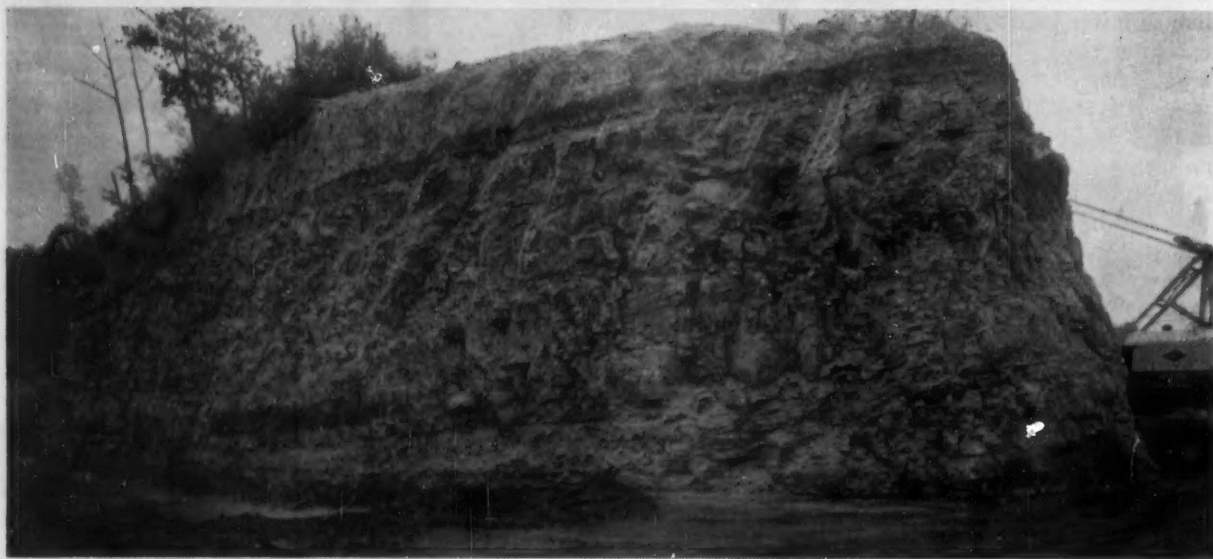




Left: the Norris is springtime by Fall this water level recedes almost 200 feet.

Below, Middle: The Lima Model 2400 stripping shovel at the McCoy Coal Co.

Bottom: Highwall on the Big Mary seam at the McCoy Coal Co. The dark streak near the top is another seam of coal that will be stripped as the cover on it increases.



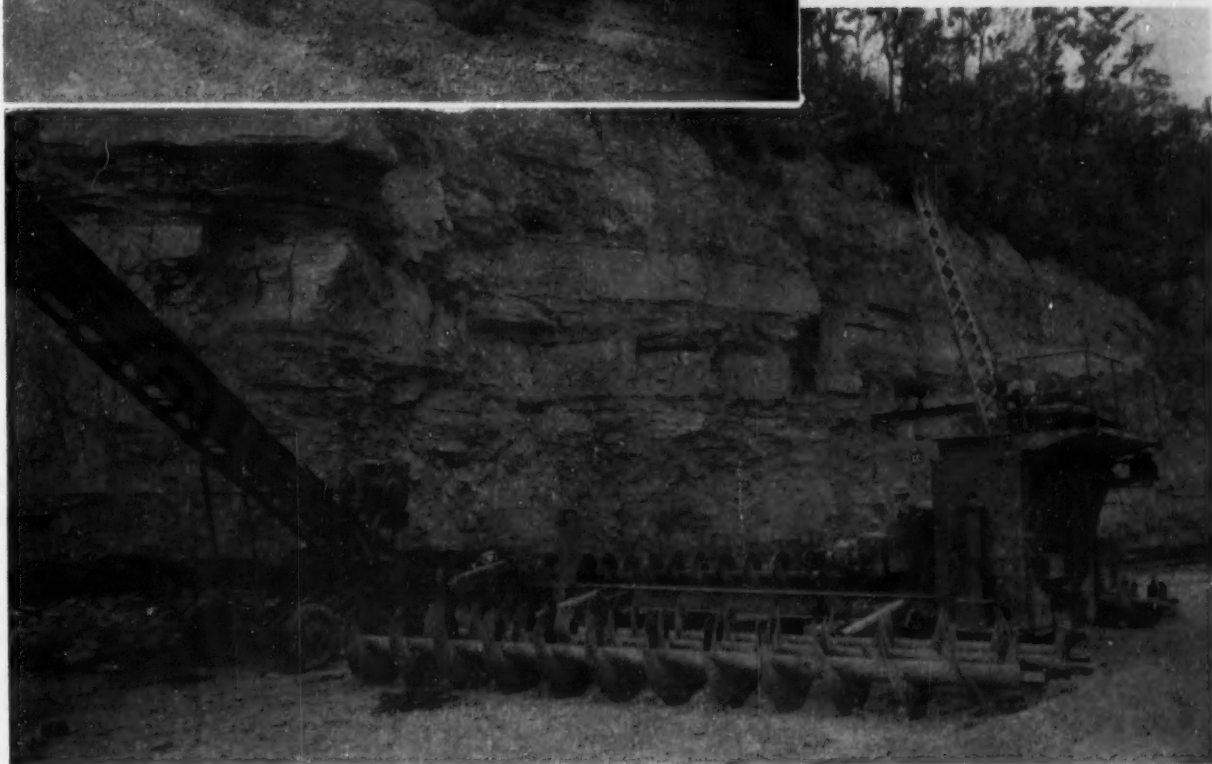
Right: The Model 12 Caterpillar Grader cleaning stripped coal at the McCoy Coal Co.



Below: The same grader preparing the face of the coal for highwall augering at the McCoy Coal Co.



Below: The late type McCarthy auger highwall auger at the McCoy Coal Co.





The Lima Model 702 shovel loading coal into the 25-30 ton end dump Euclid haulage truck which is equipped with the Allison torque braking mechanism.

pinch out or finger out.

While the optimum of 18-million tons of coal may be consumed in Tennessee some day, the 1954 consumption is expected to be about 4-million tons and this tonnage will not all be mined in Tennessee. At the present time the coal industry in Tennessee is anything but healthy. Deep Mines that have produced for World War II and shortly after are practically all closed. The TVA is paying less

than 18 cents per 100,000 BTU for its coal.

Under present market conditions only the lowest coal mines can survive. Strip mines with the most favorable working conditions and coal augers in highwalls or in areas specially opened for augering are producing most of the coal. Opening special areas for augering is done by pushing earth away from the seam of coal with bulldozer at its outcrop and augering

as deep as the seam permits or untill underground workings are reached.

Present strip and augering operations in Tennessee are few and far between. The largest and most progressive operation using both methods is the McCoy Coal Company near Robbins, Tennessee and with head offices in Jasper, Alabama. There the stripping is done with a Lima Model 2400 shovel with extra long boom, equipped



Tipple at the McCoy Coal Co. Coal is sized, loaded into railroad cars for shipment to the TVA about 85 miles away.



Above: One of the Manitowoc Model 3500 shovels at the Arnold Coal Co.



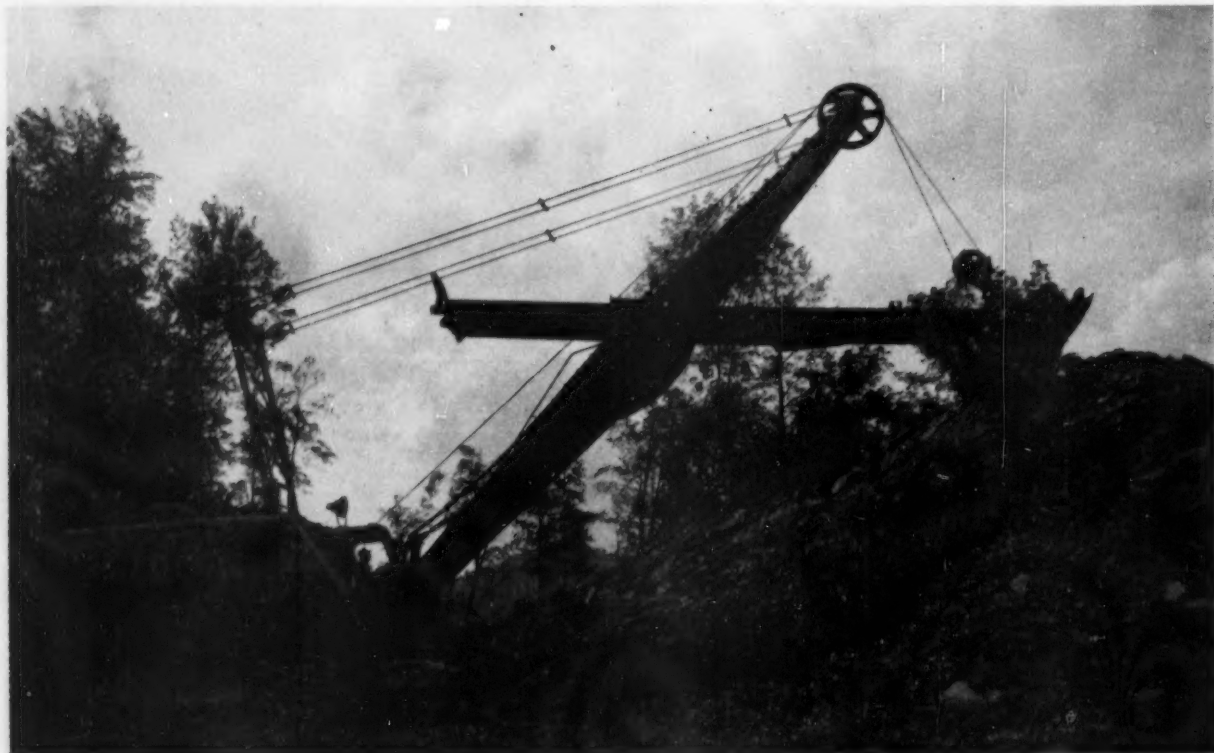
Right: The small Caterpillar grader cleaning coal at the Arnold Coal Co.

with $4\frac{1}{2}$ yard Esco dipper and a Lima 1201 shovel with $2\frac{1}{2}$ yard dipper. Up to 55 feet of cover is moved. The cover consists of weathered sandstone which is drilled for shooting with a McCarthy horizontal shot hole drill.

The Windrock seam of coal averaging 44 inches in thickness is being stripped and augered. This coal runs from 13,500 to 14,000 BTU's and about 6% in ash. The surface of the stripped coal is cleaned with a model 12 Caterpillar grader. Loading is done with a Lima model 702 shovel, equipped with a $2\frac{1}{2}$ yard Esco coal loading bucket. The hauling is done in four rear end dump Euclid trucks having 25-30 ton capacity. These trucks are equipped with Allison torque braking mechanism for braking down the steep grades with the load. Coal left in the highwall is augered with 42 inch McCarthy auger which drills holes 170 feet deep. At the tippie, the coal is dumped into a bin that



Right: The Unit shovel loading coal at the Arnold Coal Co.



The Marion Model 111 shovel stripping the Jellico seam at the Cross and Owensby operation. Cover rises so rapidly at this operation that only one strip cut can be made.



Showing the rough cover on the coal at the Sunrise Coal Company at Pardee, Virginia. One cut has been made here with a strip shovel. A tractor has loosened the large pieces of sandrock from the highwall to prepare it for augering.

Right: Tractor pushing the refuse in the preparation process for augering at the Sunrise Coal Co.

feeds onto a 42 inch wide, 150 foot long conveyor belt that takes the coal to a 36 x 42 inch Jeffrey Flex tooth crusher. The output goes to the TVA.

Near Huntsville, in the same general vicinity of the McCoy Coal Company, is the operation of the Ace Mining & Construction Company from Little Rock, Arkansas, with local offices at Oneida, Tennessee. The Big Mary seam running 52 inches thick and averaging 13,000 to 13,500 BTU'S is being stripped and augered. One cut in the overburden is made with a P & H, 2 yard shovel and D-7 Caterpillar tractor. Augering is done with a 36 inch McCarthy auger owned by the Tucker Brothers from Sophia, W. Va.

The Arnold Coal Company near Fairland, Tennessee which lies near the border of Kentucky is the oldest coal stripper in the state. The Mason seam is being stripped here which runs 48 inches thick and has been deep mined. Overburden is blue shale. Stripping is done with two 3500 Manitowac shovels which move up to 55 feet of cover. Stripped coal is cleaned



Right: The 42 inch auger at the Sunrise Coal Co.

Below: Loading out stripped coal at the Ace Mining and Construction Co.



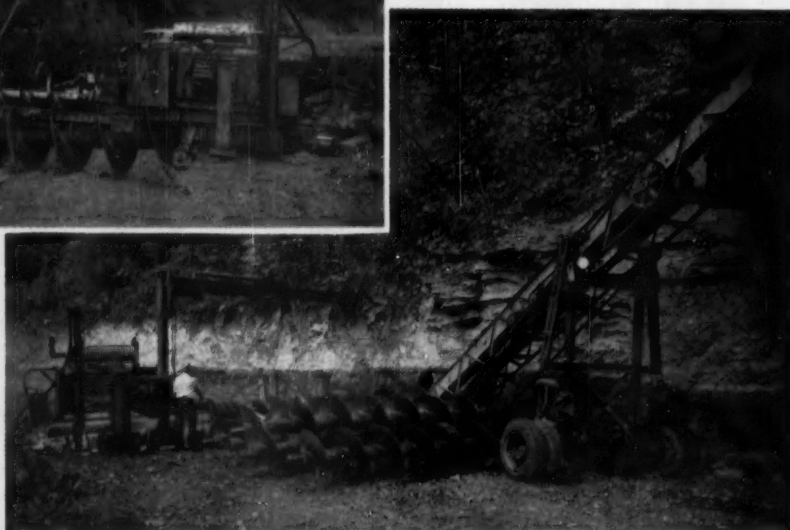


Above: Auger operation of the Tucker Brothers at the Ace Mining and Construction Co. near Huntsville.



Above: The 36 inch auger at the Sunrise Coal Co. Here the seam of coal has been reached by bulldozing the cover.

Right: The 30 inch auger at the Harlan Coal Company near Harlan, Kentucky.



Shoving opening of a seam of coal by Bulldozer.



with a small Caterpillar grader, then by hand shovel. The coal is loaded with a Unit loader, equipped with 1 yard Esco coal loading bucket.

In this vicinity are two more strippers, namely Dipple & Dipple from Morgantown, W. Va. who use two highlift stripping units and two smaller coal loading shovels. This equipment was shown in a story in COAL MINING when Dipple & Dipple stripped for the Rosedale Coal Company near Morgantown, W. Va. The other is Cross & Owensby of Pruden, Tennessee who strip with a Marion 111 shovel with a 3 yard dipper and Caterpillar D-7 and International TD 24 tractors. Overburden is shale that turns to sandstone. One cut is made in the Jellico seam which averages 30 inches thick.

Up in the Northeast corner of the Cumberland Plateau, just across the Tennessee State Line, at Pardee, Virginia, the Sunrise Coal Company is augering the High Splint seam of coal averaging 50 inches in thickness and lying 3250

feet above sea level. This seam lies above the Tennessee coal measures and has been deep mined.

Overburden rises so rapidly it permits only one strip cut in part of the area. Other areas are opened by bulldozing.

Two late type McCarthy, 36 and 42 inch, augers are used, driven by GM Deisel engines.

Going farther into Kentucky, an area from which the TVA gets some of its coal, the Harlam Fuel Company of Harlan, is deep mining, stripping and augering the Harlam seam running 40 inches thick. Two 30 inch McCarthy augers are used.

● The Board of Directors of Marion Power Shovel Company, manufacturers of power shovels and other excavating machinery since 1884, authorized the officers of the company to accept a proposal for acquisition by the company of controlling interest in The Osgood Company, and the latter's wholly owned subsidiaries, The General Excavator Company and The Com-

mercial Steel Castings Company.

This announcement was made today by John P. Courtright, president of Marion Power Shovel Company, following action taken by the board of directors at a meeting in New York, Friday, June 25. The transaction is expected to be completed in Marion, Ohio, on June 29th.

The board authorized acquisition of the stock holdings of Robert C. Owens, president of The Osgood Company by an exchange of Marion Power Shovel Company Common Stock.

The Osgood Company and The General Excavator Company manufacture lines of power shovels and cranes in sizes up to 2½ cubic yds. that supplement the line of machines built by Marion Power Shovel Company. Marion machines range in size from 1 to 45 cubic yards, and the company is now building a machine of approximately 60 cubic yard capacity that will be by far the largest in the world. The Commercial Steel Castings Company is a foundry operation.



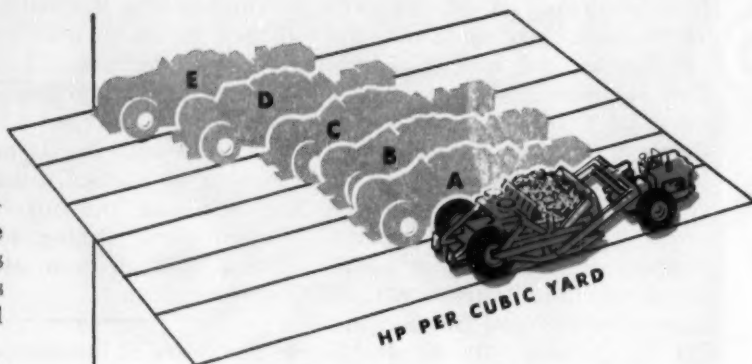
A 30-inch Hardsoc auger is being used by Michael Peloski of Jenners, Pa., to auger the Miller "B" seam of coal near Boswell, Pa. Two man crew produces 70 tons per shift making 100 foot deep holes.

COMPARE POWER, BALANCE AND TRACTION AND

Why Allis-Chalmers Motor Scrapers

Examine the Allis-Chalmers TS-200 or TS-300 Motor Scraper point by point, feature by feature. Then let your Allis-Chalmers dealer demonstrate what these features mean to you in terms of bonus yardage and dependable performance.

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The TS-200 develops 17.6 hp per cu yd struck capacity . . . the TS-300 develops 20—the highest ratios in their respective classes. With more power to move the payload, these machines get away from the pusher *fast* and maintain high average speeds throughout the entire cycle.

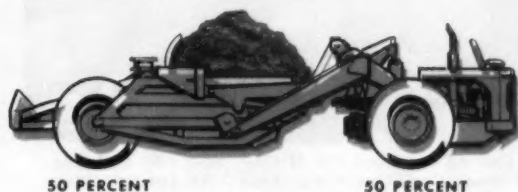


PERFORMANCE MAKES DOLLARS WHEN DESIGN

YOU'LL SEE

Out-produce

WEIGHT DISTRIBUTION LOADED



50 PERCENT

50 PERCENT

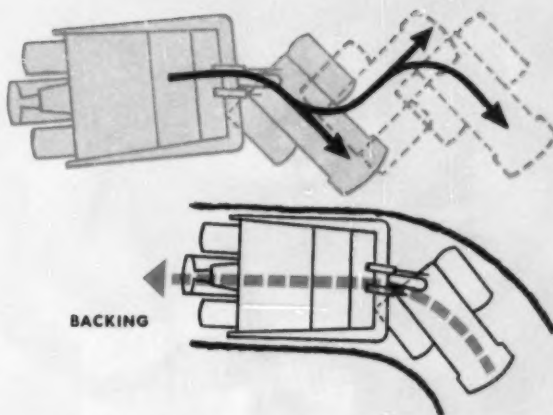
HIGHBALLS WITH THE PAYLOAD SAFELY

Loaded, the Allis-Chalmers Motor Scraper has equal weight on all four tires. This ideal weight distribution, together with low center of gravity, direct hydraulic steering which eliminates jack-knifing, and big air brakes on all four wheels, allows the Allis-Chalmers Motor Scraper to take advantage of its high hp ratios by maintaining fast, yet safe haul speeds.



MAKES SENSE

DUCK-WALKING



MANEUVERS EASILY

There are no steering brakes to rob you of tractive power. Instead, direct hydraulic rams turn the tractor in the desired direction of travel. Steering is sure and positive—even going down extremely steep slopes in loose footing.

By swinging tractor left and right with the steering rams, the Allis-Chalmers Motor Scraper can duck-walk through heavy going where others bog down.

Backing up in close quarters is simple. Two-wheel tractor has complete control over scraper body . . . can even change directions without forward or backward movement.

WEIGHT DISTRIBUTION EMPTY



34 PERCENT

66 PERCENT

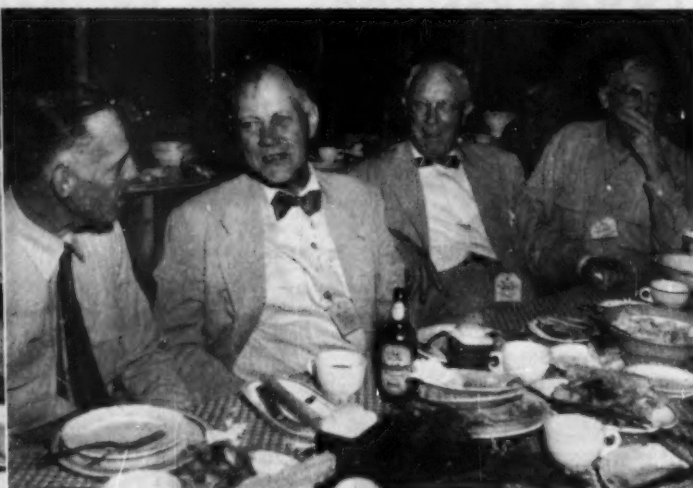
COMPLETES THE ROUND TRIP QUICKLY

The return trip from the fill is usually uphill. That's where two-wheel design pays off. When empty, 66 percent of the Motor Scraper's weight is carried on the traction wheels. There are no front wheels to rob drive wheels of tractive weight or to create rolling resistance in heavy going. This enables the Motor Scraper to make the round trip faster and usually in higher gear than other units.

ALLIS-CHALMERS
TRACTOR DIVISION • MILWAUKEE 1, U. S. A.



Left: B. W. Deringer, Central Penna. Coal Operators Assn., W. Garfield Thomas, Deputy Secretary Mines, B. Bergonier, of the B & B Construction Co., Herman Shaw, Moore's Industrial Supply Co.



F. A. Witsett, Gen. Council for Open Pit Mining Assn.; R. L. Laing, Secretary Central Penna. Coal Operators Assn.; Al Letzler, State Senator, Chas. Freeman.



W. G. Moore, left and son, Herman; W. G. Moore operated one of the first power shovels in coal stripping near Cadiz, Ohio. He was one of the pioneer strippers in the Philipsburg, Pa. area and has been active until about a year ago. W. G. Moore is now 71 year of age.

Annual Summer Outing of the Central Pennsylvania Open Pit Mining Association

● The Annual Summer Outing of the Central Pennsylvania Open Pit Mining Association was held at the Cooper Picnic Grounds on Route 53 near Kylertown.

The Cooper Picnic Grounds provide much larger facilities for the occasion which was the largest best to date. About 500 members and their friends were present.

The day's activities began with

golf at 12:30 at the Philipsburg Country Club. Refreshments were served at the Country Club after play and handsome golf prizes were given at the picnic grounds after dinner.

The dinner consisted of well prepared chicken, Country Style, and ham with plenty of fresh corn on the cob and other home cooked vegetables.



Left: Tim McCarthy, Clearfield Bituminous Coal Corp.; R. S. Walker, owner, Bradford Coal Co.; J. W. Bray, Robert Bailly Coal Co.; M. J. Harding, Dept. of Forestry.



Left: Wilfred Jannof, Robert Bailly Coal Co.; Andrew Radomsky, Eldea Coal Co., J. P. McFarlane, Exe. Sec., Independent Coal Producers Assn.; Wm. L. Harger, Pres., Sunbeam Coal Co.



Left: R. W. Runkle and J. E. Saunders, American Chain and Cable Co.; A. H. Bloom, Clearfield Bituminous Coal Corp.; Joe E. Waroquer, Waroquer Corp.; J. Highland Lewis, guest.

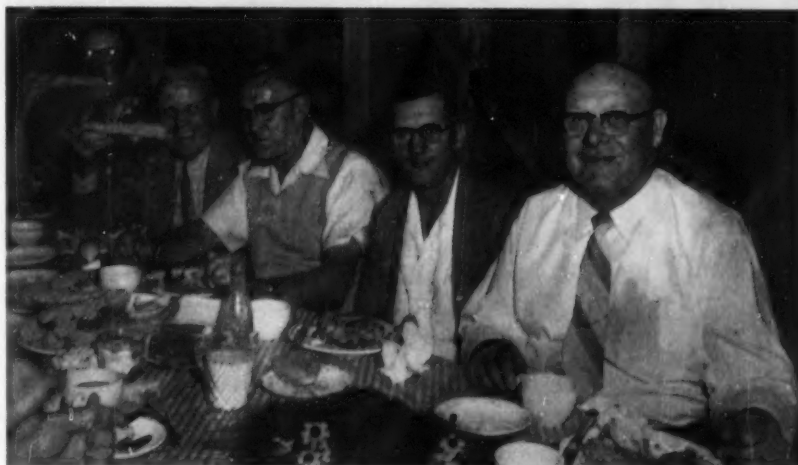


Left: Carl E. Walker, Dist. Mgr.; C. L. Amos Corp.; Lee Ramsey, Weigh Master, NYC RR.; E. P. Brown, Trainmaster, NYC RR, Roy H. Lutz, Roy Lutz Coal Co.

Numerous door prizes were presented after dinner, then several hours of very fine entertainment was provided.

The Central Pennsylvania Open Pit Mining Association is made up of bituminous coal strippers who have organized in self defense against unfair stripping laws, unfair competition and unfair labor practices. In recent years this association has been instrumental in having some unsound and unfavorable laws changed. It has also been instrumental in holding prices of coal produced in its area.

The Association is made up of an "A" and "B" membership consisting of coal producers in the "A" membership and machinery and supply firms as well as firm rendering repair services in the "B" membership.



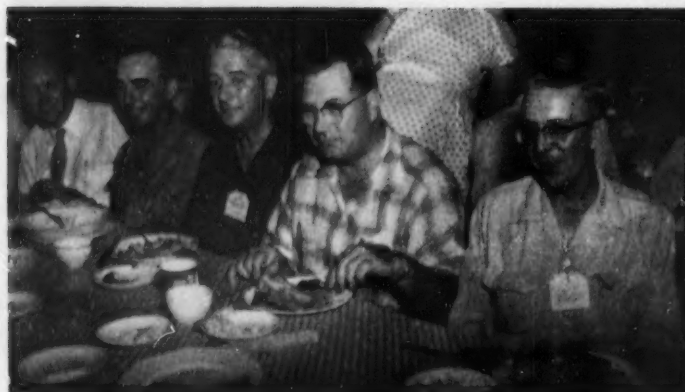
Left: J. H. Wallins, Pres., Open Pit Mining Assn.; R. M. Hess, V-Pres., Operations, Morrisdale Coal Mining Co. Robt. Hulsizer, New York Paper Co.; John McCarthy, Morrisdale Coal Mining.; Joe Baron, Pres., Baron Coal Co.;



Left: Dr. Wm. C. Bramwell, Prof. Forestry, Penna. State University; G. Albert Stewart, Secretary Open Pit Mining Assn.; R. G. Kuhns, of the John Teeter Coal Co.; Leroy Thompson, Thompson Coal Co.



Left: Fred Wood, and Ted Perks, Meyer Bros.; Herman Moore, W. G. Moore Co.; Norman Sarver, Highway Equipment Co.; Bernard Samansky, Robert Bailly Coal Co.



Left: Jim Pugh, Anderson Equipment Co.; Del Crispell, Putman, and Green Co.; James C. Riber, D. A. Lubricant Co., Inc.; Bud Dunlap, Putman and Greene Co.



J. D. Blythe, Osgood Co., Edward Boron and J. K. of the Boron Coal Co.; Geo. P. Greene, Geo. P. Greene Co.



Kenneth Braniff, Beckwith Machinery Co.; Bill McCool, Brookwalter Bros. Coal Co.; Bill Mehaffey, Bill Walker, Beckwith Machinery Co.; Merrill Brookwalter, Brookwalter Bros. Coal Co.; Eugene Steinar, Steinar Coal Co.



Left: R. D. Jones and James Murphy, Putman and Greene Co.; Arthur Bruno, The Whitmore Mfg.; R. H. Rand, Anderson Equipment Co.; Frank Zimmer, Manitowac Engineering Corp.



Left: Alex Green, Pres., A. T. Green Machinery Co.; Al Miler of A. T. Green Machinery Co.; Al Hoehler and Bud Hare of Harnischfeger Corp.



At Berlin, Pa., F. D. Croner is stripping the what is known as the Little Pittsburgh seam of coal running 48 to 52 inches thick. This seam is covered with blue shale. Above is a view of a high-wall. To the right is a Caterpillar tractor cleaning the surface of stripped coal. Below are two Caterpillar tractors backfilling.

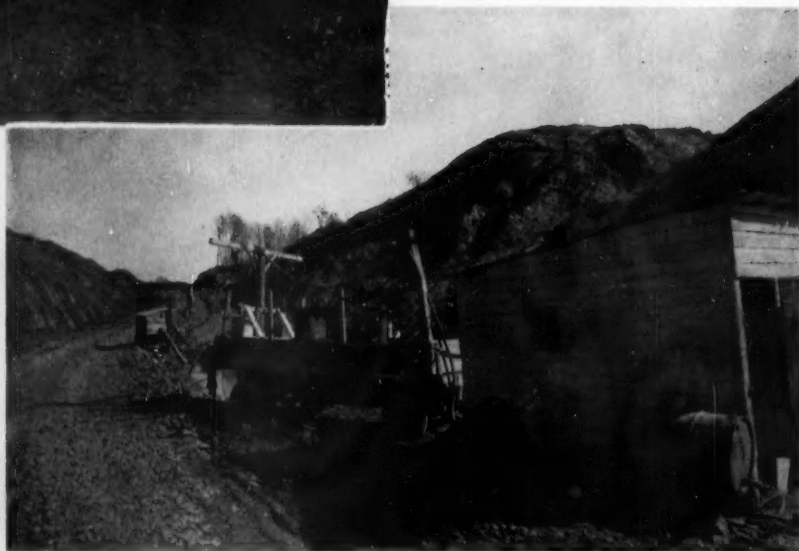




Above: A Lima Model 2,000 shovel loading a loose sandstone overburden at the James Hoffman mine near Karthus, Pa. The overburden is loaded into two end dump Euclid for hauling to the spoil-bank.



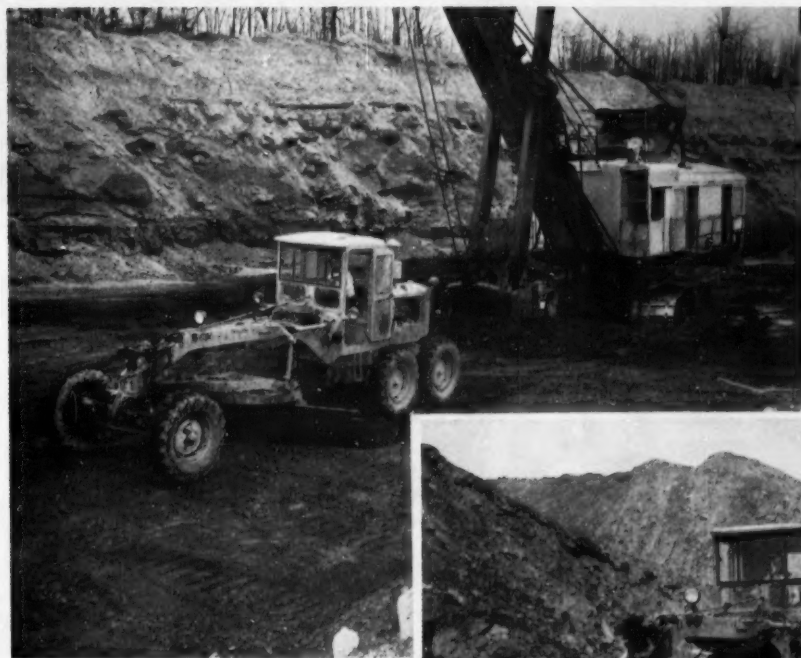
Above: An Allis-Chalmers Tractloader Model TL 12 loading coal from stockpile at the Cherry Run Coal Company, Shoshone, Pa.



Right: Transformers at a Northwestern Pennsylvania strip mine are mounted and maintained on trailer truck body for portability.



Above: Floyd Manges, of Ralpton, Somerset County, Pennsylvania is using a Lima 1201 shovel to strip the Miller "E" seam of coal averaging 32 inches in thickness at Ralpton.



Above: Caterpillar Model 12 Motor Grader cleaning stripped coal at the Tecumseh Coal Corporation, Boonville, Indiana.



Right: Another Caterpillar Model 12 Motor Grader maintaining haulage road at the Tecumseh Coal Corporation, Boonville, Indiana.

SEPTEMBER

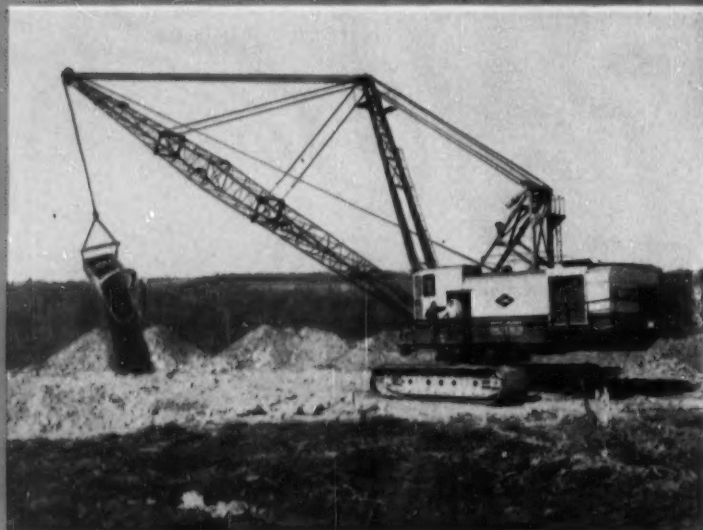
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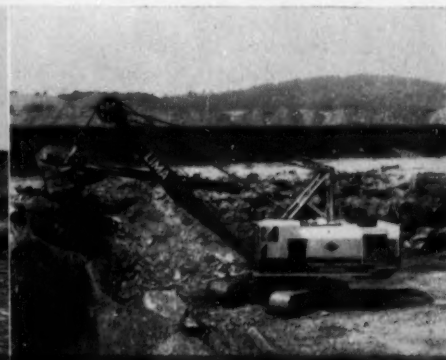
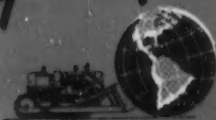
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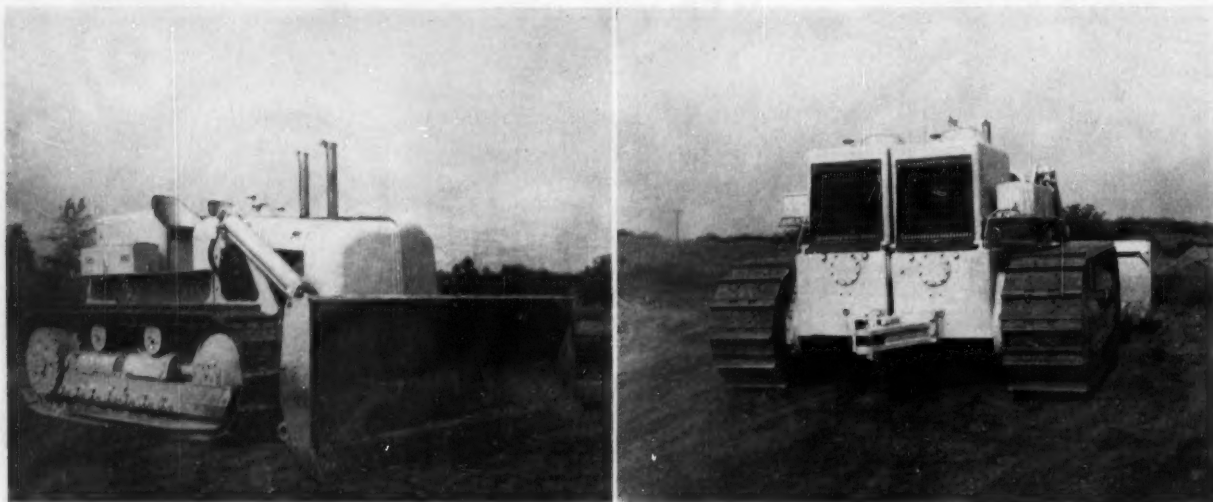
A new model 2400 Lima Dragline stripping coal for the Lingle Coal at Shawville, Pa.



Left: Euclid 18-24 cubic yard twin engine driven Scraper stripping top soil for R. C. Carlin, of Snowshoe, Pa. This Scraper travels about 600 yards a round trip.

Right: Two Caterpillar Tractors back-filling spoil at the Liberty Mining Co., Cambria County, Pa.





Front and rear views of the new GM Tractor



The new GM Tractor pushing dirt.

● The Euclid Division of General Motors announced its entry into the crawler tractor market Wednesday with a new twin-engine machine of revolutionary design.

The Model TC-12 Twin Crawler is the first of a protected line of tractors that will meet requirements for earth moving, open pit mining, logging, and industrial applications. The tractors displayed at Milford are the vanguard of twenty units to be placed in experimental field service for further testing.

Utilizing twice the horsepower of tractors now in production, the Euclid tractor is powered by two 190 horsepower GM Diesel six cylinder engines, each driving an Alli-

son Torque Converter and Allison Torqmatic Transmission. Each drive train independently powers one track. Final drive gearing is the same job proven Euclid Planetary used in off-highway 50-ton dump trucks and the 25 yard bottom-dump wagon.

Two separate drive and track assemblies are free to oscillate on a seven inch transverse shaft. The Euclid Twin Crawler can be separated for shipment where weight and width restrictions are encountered. The two-section design also gives flexibility over uneven ground. The tracks maintain good traction because each half of the tractor maintains better ground

contact in rough terrain. A free movement of seven inches is limited by stops welded to each frame half. For applications where oscillation is not desirable, some of the tractors will be field tested with rigid mounting on the cross shaft.

The Twin Power principle is a Euclid development resulting from demands for more power and greater earth moving ability. Twin Power drive from two engines has been used in 34-ton and 50-ton rear-dump trucks, Twin-Power 18 yard scrapers, and bottom-dump wagons where each engine drives through a converter and transmission to a drive axle.

The use of paired and proven components results in an earth-mover which gives lower cost per yard of earth moved because—

1. It utilizes high columns, lower cost assemblies used in other smaller sizes of earthmoving machines.
2. Parts supply and parts cost are favorable.
3. Components are matched to power output of engine, without necessity of developing a completely new power train for new, larger tractors.

By using twin engines and two transmissions in larger tractors, and single engines with single transmission in smaller tractors, it is possible to have two models with similar power trains.

The result of intensive study of crawler tractor requirements, the Euclid TC-12 experimental tractor is designed to provide higher power-to-weight ratios. Drawbar pull, equal to or better than current production crawlers, but at higher ground speeds, will give tractor

ability for faster pusher loading of rubber-tired scrapers. Proving Ground tests indicate the Euclid TC-12 develops approximately twice the drawbar pull at $2\frac{1}{2}$ miles per hour scraper loading speeds, compared to present "big tractors." This loading speed matches the first gear speed of rubber-tired scrapers, for better, more efficient scraper loading.

There are two transmissions each with an integrally mounted torque converter. The crawler tractor transmission, made by GM's Allison Division, provides three speed ranges forward and three in reverse. All shifting is accomplished under full power. There is no master clutch. The tractor can be shifted from one speed range to the other, without loss of motion, and can be shifted into reverse while still going in the forward direction. The transmission provides adequate speed selection for all operating conditions. Top speed is 8 MPH.

The Twin Power arrangement permits a fast, flexible steering system, which increases workability. The Euclid tractor can be steered in several ways. It can be steered by increasing or decreasing the speed of one engine for gradual, even change in direction; it can be steered by putting one transmission in neutral and apply a track brake; or rapid, sharp turns under full power can be made by putting one transmission in forward and the other in reverse. The choice as to the method of steering assists the operators in shortening his cycle time.

Excellent accessibility is achieved for all components. The tractor can be dismantled and reassembled with ordinary servicemen's tools. The engines are mounted side-by-side, and drive through universal joints and drive shafts to the torque converter, which is located below and to the rear of the operator location. The converter, transmission, reduction gearing, and steering brake form one complete removable assembly. The reduction drive gears for each half of the tractor transmit power through an axle shaft to the sun pinion and the three-gear set of the Euclid planetary, located within the drive sprocket. The Euclid TC-12 can be almost completely dismantled without removal of the roller frames. This is unique in the industry and permits easy access to all of the final drive parts.

An experimental track tension-

ing device, based on hydraulic principles, is being tested in these machines. This is a part of the continuous efforts of Euclid engineers to achieve an improved crawler tractor design.

The front hood cover of each tractor half is hinge-mounted to permit ready access to the engine. Two radiators are located to the rear in order to make the operator's position free of dust and objectionable heat. The radiators are hinged to rotate out of the way for access to the transmissions.

Two SAE standard mountings are located at the rear of each tractor half for mounting of winch and cable control units.

The four tractors displayed at Milford are equipped with a push plate for scraper loading, a hydraulically controlled $13\frac{1}{2}$ ft. bulldozer blade, a 17 ft. 3 inch angled dozer blade, and a pull yoke for a Euclid loader. A full complement of additional attachments is being planned, including cable-controlled type bulldozers. The Euclid TC-12 Twin Crawler tractors is a product developed through resources of the Allison, Euclid, and Detroit Diesel Engine Divisions, all of which are under the overall direction of C. R. Osborn, GM Vice President in Charge of Engine Group.

The new crawler tractor line will be marketed through distributors of the Euclid Division in addition to present earthmoving equipment products. No new plants are presently planned.

TC-12 Specifications

Horsepower. 380—Two GM Model 6-71 Diesel engines

Weight: 53,000 lbs. Approximate
Bare: 65,000 lbs. with Bulldozer and other attachments.

Drawbar Pull: Maximum drawbar pull almost equal to tractor weight with working accessories.

Travel Speed: 0 to 8 miles per hour, with three speeds.

Engine: 2 Detroit Diesel Model 6-71—190 HP each.

Fuel: General Motors Detroit Diesel Fuel Specifications.

Starting Method: Electrical Starting.

Track:

Number of shoes (each side) 39
Width of standard track shoe 26"
Height of grouser (measured from upper face of standard track shoe) ----- $2\frac{7}{8}$ "

Length of tracks on ground
(Center drive sprocket to center front idler) ----- $115\frac{5}{8}$ "
Area ground contact with track shoes -----6000 sq. in.

Transmission: Two Allison Torque Drives, CRT-5530

Steering. With engines, transmissions and brakes.

Clutch: None required.

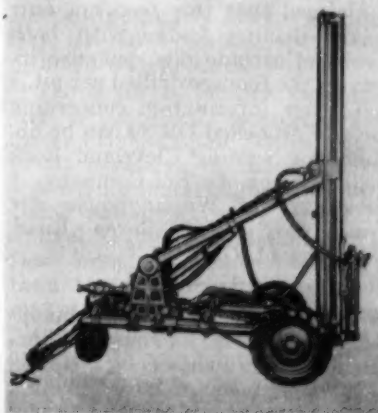
General Dimensions:

Length (overall) -----15'
Width (overall) -----11'4"
Height (exclusive of the exhaust stacks) -----8'
Ground Pressure ----- $8\frac{1}{2}$ lbs. per sq. in. bare

● The S. E. Gane & Company, manufacturers representatives located at 508 Grant Street, Pittsburgh 19, Pa., is now representing the Connellsville Manufacturing & Mine Supply of Connellsville, Pa.

● The addition of a Cleveland air motor and special axle, to make its popular Cleveland DR-30 Wagon Drill self-propelled, has been announced by Cleveland Rock Drill Division of Le Roi Company.

According to company officials, this change has been made to meet the growing demand for more flexibility in deep-hole drilling power, and to save set-up time. The Cleveland air motor, with its gear ratio, has plenty of power for propulsion over rough terrain. A similar air motor is also used for raising and lowering the wagon-drill boom and further speeds the drilling operation.



Power is transmitted from motor to wheels by a chain drive. Though this is shown exposed in the view above, it is actually fully enclosed.

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Type AD Hor. Split Case, Two Stage Centrifugal

Type OD Hor. Split Case Double Suction Single Stage Centrifugal

Type GMC Close-Coupled Centrifugal

Type GGU Side Suction Single Stage Centrifugal

NSA Aurora Centrifugal Sump Pump

APCO TURBINE-TYPE PUMPS—the simplest of all pumps. Ideal for small capacity, high head duties. Silent, compact and lasting.

APCO Single Stage Turbine-Type

APCO Horiz. Condensation Return Unit

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Wheels are mounted on an automotive-type axle.

Cleveland Rock Drill engineers point out that the DR-30 retains all of the features that have won it such wide acceptance. These include strong rotation and powerful hole-cleaning ability.

Patented air feed has an 8-foot travel for 6-foot steel changes. It is claimed that this feed not only makes drilling faster with both steel and carbide bits, but also increases the footage drilled per bit.

Further information concerning the self-propelled DR-30 can be obtained by writing Cleveland Rock Drill Division, Le Roi Company, A Subsidiary of Westinghouse Air Brake Co., 12500 Berea Road, Cleveland 11, Ohio.

● Femco, Inc., electronic manufacturer of Irwin, Pa., has announced the appointment of Jack Helton as sales engineer in West Virginia and the Carolinas. Mr. Helton will make his headquarters in Bluefield, Virginia.

With Femco since 1950, Mr. Helton was formerly a sergeant in the

U. S. Air Force. He attended radar technical school at Boca Baton, Florida. After graduation, he worked on aviation radar equipment.



Femco, Inc., pioneers in electronic communication systems, has recently expanded its line to include many different devices for automation of equipment and processes in mining and industry.

● A booklet depicting improved methods of crawler tractor manufacturing over the last fifty years has been released by Caterpillar Tractor Co.

The booklet, written in conjunction with the fiftieth anniversary of the crawler tractor, gives a brief history of track type tractor manufacture beginning with the building of the first practical crawler exactly fifty years ago by a parent company of Caterpillar.

Illustrations showing product improvement through a half-century of research, scientific engineering and progressive manufacturing methods are placed throughout the book.

Highlighted also is the company's "no parts orphans" policy. Established simultaneously with the building of the first tractor, this policy assures Caterpillar owners that parts are available for their machines no matter how old the units are or how long they have been in service.

The eight page booklet, form number D438, is entitled "Caterpillar, Pioneer in Tracks," and can be obtained from any Caterpillar Dealer or from Caterpillar Tractor Co., Peoria, Illinois.

● The Locust Summit Central Breaker team won the title of Golden Anniversary First Aid Champions at The Philadelphia and Reading Coal and Iron Company's annual First Aid Contest at Lakewood Park last Saturday (August 14, 1954). The winning score was 99.8333.

Members of the team included: Leonard Banning, Robert Vaughn, Henry Baur, Thomas Reidinger, William Nuss, Sr., Raymond Mock and Edward Koch.

Second place went to the Potts Colliery with a 99.5333 score, and the third place winner was the Engineering Department with a 99.4666 score.

● A new leaflet on "Jalloy, Grade 3," a special alloy steel for heavy duty use, is available from Jones & Laughlin Steel Corporation, Pittsburgh, Pa.

Outlined in the leaflet are properties, composition, applications, case histories, and information on heat treatment of this steel for optimum results.

● A colorful two page bulletin has just become available on the Le Roi 105 cfm Utility air compressor.

The Utility has been placed back into the Le Roi line after an absence of several years following heavy demand from the field. The new and improved Utility features better air cleaning and cooling through the use of oil bath air cleaners and a pressurized cooling system.

According to the bulletin, the 105 Utility was specially designed for public utility service. However, general contractors, steel erectors, and industrial users have found the unit suited for a variety of jobs because of its space conserving portability.

Installation drawings on the new literature show that the width is 25 inches and the overall length is only 82 inches. This length allows the Utility to be mounted transversely against a truck cab without exceeding the maximum truck width regulation for any state.

Photos show the compressor with and without the removable lightweight expanded metal hood sides. Specifications for the compressor and engine and a complete rundown on tool capacities are included. Copies may be obtained from: Le Roi Company, Attn.: Advertising Department, 1706 S. 68th St., Milwaukee 14, Wis.

● The skeptical worker who wants to know what he stands to gain from working safely will get a ready answer from the National Safety Council's new employee training booklet, "What's in It For Me?"

The 16-page booklet shows that everyone — the employer, the public and the worker—gains from a good safety program. Stressing the theme that no one is immune to accidents if he is not careful, the booklet drives home the fact that it is not where you work but how you work that makes for safety.

"What's in It For Me?" encourages the worker to help himself to happier, accident-free living by aiding the company in its fight against accidents. By reporting unsafe conditions and unsafe acts, the worker can help find a better and safer way of doing the job.

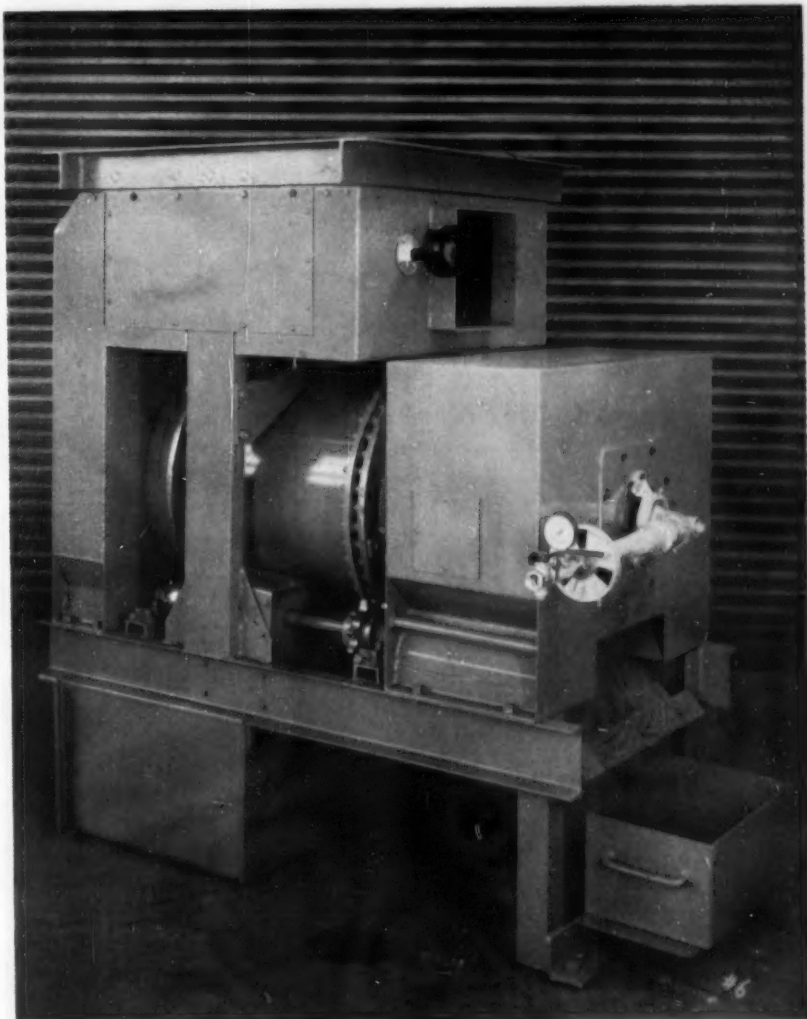
Illustrated in four colors, the booklet uses few words, but plenty of cartoons, to put across its message. For a sample copy and quantity prices, write the National Safety Council, 425 No. Michigan Ave., Chicago 11, Ill.

● The new high-speed Athey PH20 Coal Hauler, that has captured the attention of open-pit miners, is described in detail in a new 6-page catalog released by Athey Products Corporation.

The story of the sturdy construction, many design features and cost-cutting performance of the 40-ton hauler is told in words and pictures. Unusual layout technique and the use of many illustrations make the folder attractive and interesting. Complete description and brief specifications of the PH20 and its teammate, the 275 HP (ASME Codes) Cat. DW20, are included in the booklet.

Copies of the folder are available without charge at Athey-Caterpillar Dealers or by writing Athey Products Corporation, 5631 West 65th Street, Chicago 38, Ill.

● A relatively high capacity, compact Rotating Drum Dryer of advanced design is now being produced by Roberts and Schafer Company for drying or heating granular crystalline materials in steel and by-product processing industries. The dryer may be used in production or as a pilot plant unit. It requires a floor area of only 3 ft. x 5½ ft. with an overall



height of 6 ft. and the location of the surge-feed hopper above the drum permits the hot gases from fuel combustion inside the drum to flow against the incoming material in the surge hopper and thus increase preheating efficiency. It may be operated on either Bunker oil or gas.

An outstanding feature is the positive pin-sprocket transmission to the rotating drum and also the pin to pin can transmission to the turntable feeder disc. This all-positive drive prevents slippage at high or low capacity, high or low speed. A variable speed drive permits manual selection of from 8 to 24 r.p.m. of drum rotation. Both feeder disc for the release of measured quantity and rotating drum are powered by a single ¾ H.P. variable speed motor.

Actual installations as a sand dryer have produced hourly capacities of 3 tons. The adjustable

measuring feed and speed selection, in contrast with fixed speed, has the decided advantage of suiting the operation to the raw material. This will, of course, influence the hourly discharge capacity, but furnishes a properly conditioned end product.

The dryer is factory assembled and is supplied complete with motor drive, electric control equipment, exclusive of main breaker and wiring material, but including flame and overheating protective control, ready for installation. The floor area required is little more than that of an office desk and makes the dryer suitable for replacing the commonly used stove dryers with only slight or no structural changes of present surroundings.

Complete information contained in Bulletin 181. Write Roberts and Schafer Company, 130 North Wells Street, Chicago 6, Ill.



100 PER CENT OF EMPLOYEES OF PHILADELPHIA FIRM BLOOD DONORS

Phila. — For the third consecutive year, The Philadelphia and Reading Coal and Iron Company of this city was awarded the flag of 100 per cent employee donor participation in the Red Cross blood program. The award was presented by E. Walter Hudson (left), Central City branch chairman, at the branch's regular meeting today (Thursday, August 12, 1954) at Red Cross headquarters, Broad and Vine streets. Numerals were also added to the 100 per cent pennant the firm was first awarded in 1952.

The award was accepted for the Company by Earl F. Rice, Company blood donor chairman. The 125 employees of the coal company here have donated 501 pints of blood since September, 1950. Rice, recruitment chairman for the Company since 1950, was also honored by the Red Cross.

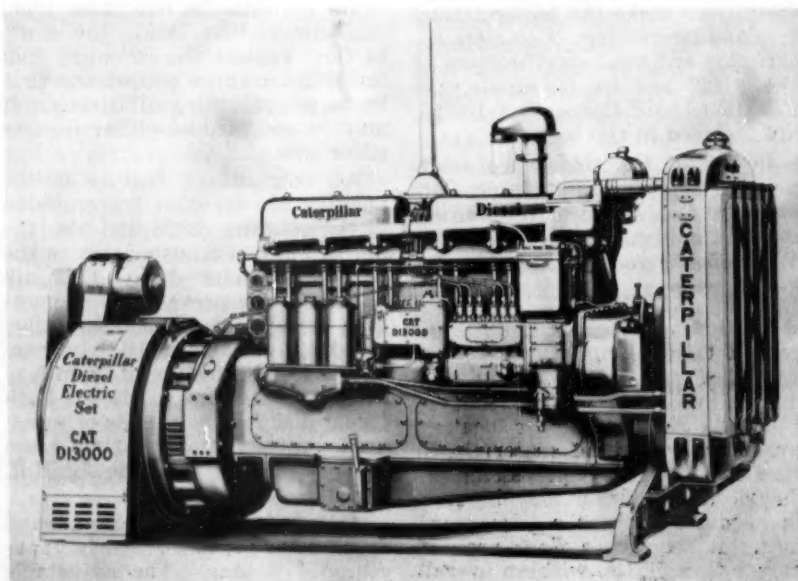
● New changes in the design of its D13000 Diesel Engine resulting in increased outputs have been announced by the Engine Division of Caterpillar Tractor Co., Peoria, Ill.

The D13000 Marine Engine shows increases of from 1000 to 1225 rpm and from 120 to 150 hp. The D13000 Diesel Electric Set now operates at 1200 rpm and boasts an increase in capacity from 80 to 100 KW.

Increased output in the six cylinder, four stroke cycle engine resulted in a number of major changes. Positive action valve rotators, replaceable valve seat inserts and larger, stronger valves have been made standard in the new D13000's breathing system. Use of these new valve components combines increased engine breathing ability with longer valve life, thus making possible additional horsepower output and lower maintenance costs.

Vibration-free operation is made possible by the use of a sturdy, metal-enclosed vibration damper fastened directly to the front of the crankshaft. Use of the vibration damper is optional in installations where the engine speed is kept below 1000 rpm.

Improved high lift cam profiles give the new D13000 better valve seating and increased breathing



ability. In addition, a new oil-bath air cleaner and larger intake and exhaust manifolds help to handle the additional air required by the more powerful engine. These changes help to lower exhaust temperatures and create reserve power.

Added to the engine is a new, larger water pump with greatly increased capacity. A new face-type seal which requires no adjustment by the operator to compensate for wear is now used in the new engine's water pump. Larger water lines and water manifold supplement the new pump to provide improved cooling of the engine and keep vital operating parts at the proper temperature. There are now only two operating adjustments needed on the D13000—fan belt adjustment and infrequent valve clearance setting.

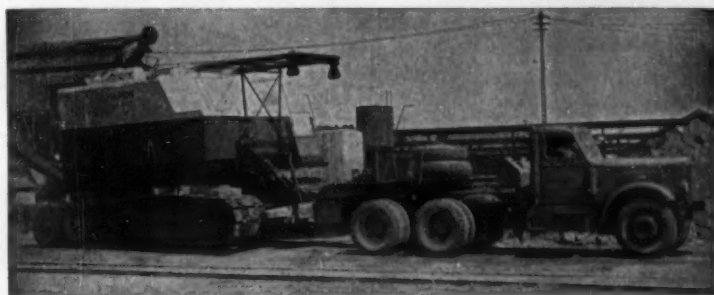
New, oil-cooled pistons in the D13000 are made of high strength, light weight aluminum alloy with stainless steel heat plugs in the high temperature zone and cast-in iron bands for the top ring groove. New piston pins of aircraft quality steel and sturdier connecting rods help the new pistons carry the greater loads imposed on them.

The new engine's oil pump features throttling valve pressure controls to assure correct lubrication for all moving parts from the first turn of the crankshaft. One of these valves accurately controls the intake of oil from the sump, matching that intake to the oil pressure actually in the system. The other valve acts as a safety mechanism, relieving any excess pressure which might be built up by cold oil. Oil pick-ups are provided at the front and rear of the crankcase to insure an adequate supply of oil to the pump if the engine should be tilted during operation.

● Publication of a new 2-color, 4-page catalog descriptive of Galion Allsteel Model 12N-3 bodies and Model 600, 700 and 710 hydraulic hoists is announced by The Galion Allsteel Body Company, Galion, Ohio.

The new folder is profusely il-

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lustrated with action photos, line sketches and cut-away views. Construction details and mechanical features of bodies and hoists are discussed, with special emphasis on exclusive features of Galion products. Full specifications are included.

Model 12N-3 bodies are available in lengths of 8 to 10 ft. Hoist ratings range from 6½ to 9 tons.

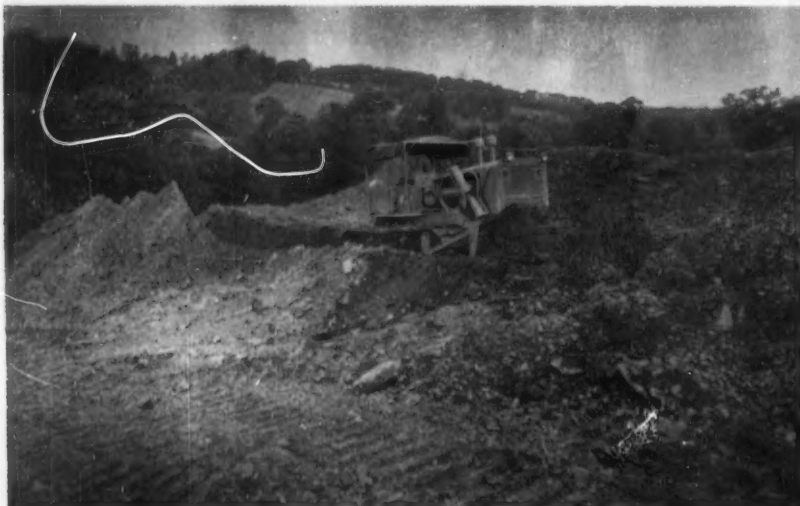
Catalog copies are available at all Galion distributors or upon request to The Galion Allsteel Body Company, Galion, Ohio.

● The "Tools of Automation," a new twelve-page booklet issued by Reliance Electric and Engineering Company of Cleveland, Ohio, expresses the company's philosophy of combining applied engineering, creative thinking, and electric

motor drives to provide the "know-how" for automation of single machines or continuous processes. Many illustrations and sketches accompany each section to help tell the automation story. Individual booklet divisions illustrate the combination of motors and creative engineering as an aid to choosing the "right motor for the job;" Adjustable-Speed V-S Drives as a tool of Automation; and electronic controls and regulators that provide precise, accurate motor drive control and regulation. A final section of the booklet includes captioned photographs which graphically illustrate automation at work in many industries. Copies of the booklet are available without charge from Reliance Electric and Engineering Co., 1076 Ivanhoe Road, Cleveland 10, Ohio.



A Manitowac Model 3500 dragline and Allis-Chalmers Model HD 19 tractor stripping up to 30 feet of top soil and yellow and brown off the Central Pennsylvania Miller "B" seam of coal at Coal Junction, near Boswell, Pennsylvania. The coal run about 30 inches in thickness. The cover rises rapidly and does often allow more than one cut with the present stripping equipment.



Allis-Chalmers HD-20 tractor backfilling at the operation of Norman Critchfield in Somerset County, Pennsylvania.

GE 25 Tow — 44" ga. 6 Wheel — 40" high
Contractor Controls — Blowers — Air
Brakes — Excellent Operating Condition —
Price FOB Mine ————— \$4,500.00
Joy Continuous Miner — Series JC 4200 — 200—
52" high, good operating condition. Price
FOB Mine ————— \$12,000.00
Deister Tables — Good Condition for your
preparation plant — Call us.
4500 Manitowac 4½ yd. Dragline and Shovel
Combination, with Caterpillar Deisel Drive.
Lima 802 High Front 2½ yd. Shovel with 100
ft. boom.
Complete 4 track tippie with Coalwasher and
one steel coal bin.
McCarthy 36" High Wall Auger good operating
condition, used 4 years. Deisel V-8 engine.
Joy 8 BU Loader — Joy 14 BU Loader —
Joy 11 BU Loader.
Joy MTB 30" Belt Conveyor 2000 ft. centers.
W-H 300 KW — MG Set and 500 KW — MG
Set.
Goodman 512 Cutting Machines with bug-
dusters.
Jeffrey 29V Cutting and Shearing Machine.
Joy-Sullivan 7 AV Cutting and Shearing
Machine.
Deisel Driver Generator sets.
Myers-Wholes Track Type Loader.
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- 2—14-BU, med. pedestal Loaders, 10 H. P. motors, 7 RBE.
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- 1—12-BU, 9E latest type Loader.
- 2—8-BU Loaders, one 23½" high.
- 2—11-BU Joy Loaders, hi capacity.
- 5—Joy T2-5 Cat Trucks, low pan. 1—T2-6.
- 1—Joy T1 Standard Cat Truck.
- 1—Goodman 20" Belt Conveyor, 1000' centers.
- 2—Joy 30" Belt Conveyors, 1000' and 2000' centers. Like new.
- 4—Joy 11B low vein Cutting Machines, 35 and 50 H. P.
- 6—Jeffrey 35L Cutting Machines, 250 volt DC. Perfect.
- 2—Joy 6 SC four wheel drive Shuttle Cars, rebuilt. Elevated discharge.
- 2—Joy 5 SC four wheel drive Shuttle Cars.
- 5—42E Shuttle Cars, as is or rebuilt.
- 10—32E Shuttle Cars, as is or rebuilt.
- 4—Joy PL11-14 Elevating Conveyors, rebuilt.
- 2—Joy Belt Feeders PL12.
- 3—Myers Whaley No. 3 Automat Loaders. Jeffrey L-500 Loaders.
- Goodman 360 Loaders.
- Cedar Rapids portable 3 track tippie complete with conveyors. Like new.
- General Electric & Westinghouse Rotary Converters and M. G. Sets, 100 to 300 KW. Latest types.

- 1 Ea. G.M.C. Cummins & Superior 75, 100, & 125 KW Diesel Plants, 250 DC volts.
- 6—Goodman 512EJ Cutting Machines.
- 7—Goodman 312 low vein Cutting Machines. Like new.
- 3—Baby Goodman 212AA Cutting Machine. Jeffrey 35L, 35B, 29C, 29L Cutter.
- 50—Locomotives of all types in stock.
- 6—3000 Gal. Storage Tanks, like new.
- 4—Brown Fayro HKL Car Spotters.
- 2—HGD Hoists, Brown Fayro.
- 1—Hi-pressure large capacity MSA Rock Duster.
- 2—MSA portable Rock Dusters.
- 1—Electric Steam Cleaner.
- Incline Hoists, all types.
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- Joy and Jeffrey 12" and 15" Chain Conveyors.
- Shaker Conveyors, Goodman and Joy.
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- 16 yd. Dragline Bucket.
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- Quickway Truck crane and shovel.
- 50—Tons Copper Trolley & Feeder Wire, all types.
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- Stationary Motors, AC and DC.
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Joy Series JC 4200-M Continuous Miner, 52 inches high overall. Price ————— \$12,000.00

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Item WV105—Caterpillar Model D8 Tractor Mounted with Caterpillar Model 88 bulldozer and LeTourneau Double Drum Cable control, equipped with crankcase guard, front pull hook and canopy top. Installed new pistons, rings and complete valve job on starting motor. Installed new pins in master clutch, adjusted steering clutches and entire unit has been cleaned and painted. This unit is in good condition. **BONDED BUY. F.O.B. Clarksburg, West Va. \$7,000.00**

Item C134—Caterpillar D8 Diesel Tractor, equipped with Caterpillar 8A cable blade and No. 25 cable control unit. New track roller installed, one new sprocket ring installed. Machine has canopy top, crankcase guard, new paint. **CERTIFIED BUY. F.O.B. Clarksburg, West Va. \$8,500.00**

Item C101—Caterpillar D7 Diesel Tractor, equipped with LaPlante Choate Hydraulic angledozer, radiator guard, crankcase guard, front pull hook, canopy top, track rollers, idlers and sprockets, good. New Paint and Decals. **BONDED BUY F.O.B. Clearfield, Pa. \$12,500.00**

Item C142—Caterpillar D6 Diesel Tractor 60" gauge, equipped with LaPlante Choate hydraulic angledozer, crankcase guard, track roller guards and front pull hook. **CERTIFIED BUY. F.O.B. Clearfield, Pa. \$6,800.00**

Item WV 106—Caterpillar Model D2-50" tractor, equipped with crankcase guard, track carrier rollers and 16" grouser tracks. Installed new final drive pinion and new sprocket and reined steering brake, left side. This entire unit has been cleaned and painted and is in excellent condition. **BONDED BUY. F.O.B. Clarksburg, W. Va. \$2,900.00**

Item C128—Caterpillar D2-50" Diesel Tractor, with D2N Hyster Winch, crankcase guards, pull hook, track roller guards, radiator guard, side mounted fuel tank. Good condition. **CERTIFIED BUY. F.O.B. Clearfield, Pa. \$3,300.00**

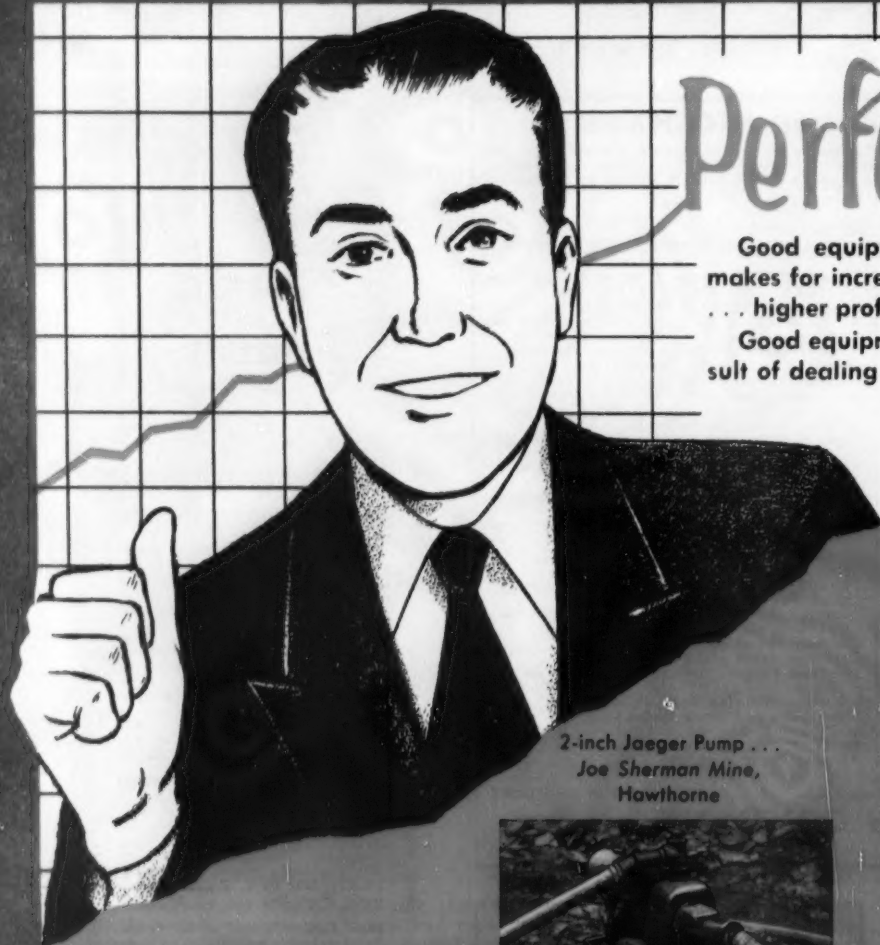
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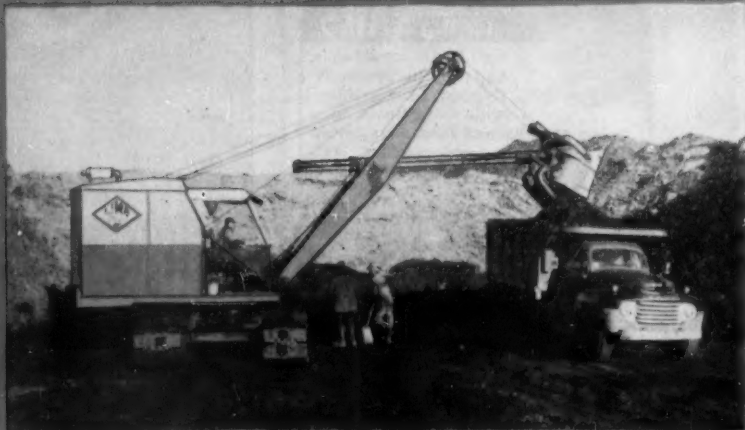
Lima 1201 . . . Russell Cravener Mining Co., Kittanning



2-inch Jaeger Pump . . .
Joe Sherman Mine,
Hawthorne



Allis-Chalmers HD-20 . . .
Iseman Mining Co., New Bethlehem



Lima Paymaster . . . Sunbeam Coal Co., North Washington

A-1000

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Leading Operators use "Eucs"

► Built for tough off-the-highway service Rear-Dump and Bottom-Dump "Eucs" are cutting the cost of hauling overburden, coal and mine waste on scores of mining operations. Big payload capacity, fast travel speed and high job availability add up to more loads per hour and lower cost per ton or yard hauled.

Your Euclid Distributor will provide a hauling production and cost estimate for your operation... there's no cost or obligation so get in touch with him soon. Let him show you how "Eucs" can cut your coal hauling costs.

EUCLID DIVISION
GENERAL MOTORS CORPORATION Cleveland 17, Ohio

▲ In the Pennsylvania anthracite field, Wadesville Production Company has used Rear-Dump "Eucs" of 22 to 34 ton capacity to move more than 17 million cu. yds. of overburden and nearly 2 million tons of coal since operations began in June of 1948. Performance has been so satisfactory that "Eucs" are standard hauling equipment on this big operation... 20 units are presently in use.

Truax-Traer Coal Company has used Bottom-Dump Euclid Coal Haulers at their Illinois operation since 1935. The Euclid fleet, 14 units of 20 ton capacity and six 25 ton "Eucs", delivers an average of 8500 tons of coal to the washing plant per eight hour day. High travel speed from pit to tipple on hauls up to 3½ miles and the long service life of the Euclids help to keep hauling costs at a minimum... every "Euc" purchased by the company is still in service! ▼



Euclid Equipment

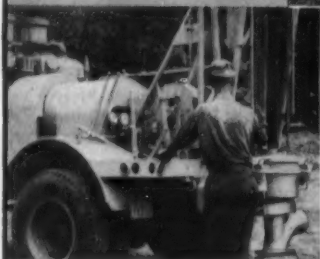
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shot holes...blast holes...core drilling...structure testing
water well drilling...oil exploration

Here, at last, is the new line of rotary drills that operators have always wanted and needed.

Available in several "air blast" or "mud pump" models to meet individual requirements, Daveys drill faster and more economically than previously available units. For example, rated capacity of

Model M-8A (as illustrated) is 5½ inch holes to a depth of 300 ft. with air and 7½ inch holes to 2,000 ft. with mud. Suitable for mounting on any make of truck, Davey Rotary Drills may be driven from the truck engine by a power take-off or by a separate gasoline or diesel engine.

AA-203

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COAL MINING

SEPTEMBER, 1954

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ESCO End Bits are cast of special alloy steel for longer life on any job!

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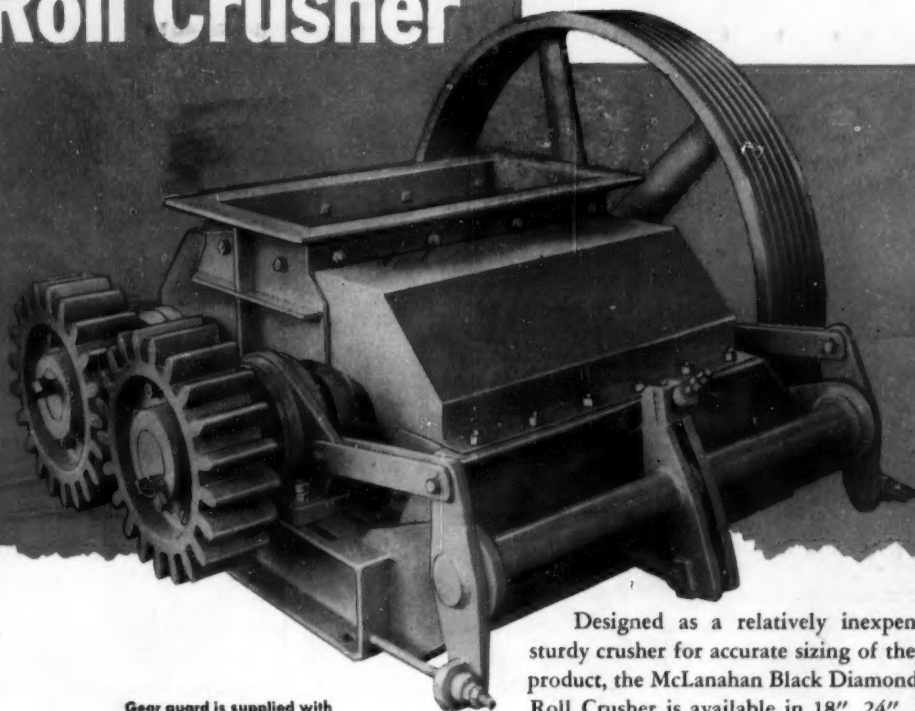


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**... A Low Cost Sturdy
Crusher for re-
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Lime—Cinders and
other similar
Crushable Materials**



**Gear guard is supplied with
crusher. Photo shows guard
removed.**

Designed as a relatively inexpensive yet sturdy crusher for accurate sizing of the crushed product, the McLanahan Black Diamond Double Roll Crusher is available in 18", 24", 30" and 36" diameter rolls with roll widths from 18" to 60" for handling various feed sizes and capacities. Cast steel or semi-steel gears with extra long teeth provide adjustments in crusher opening. Anti friction bearings.

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